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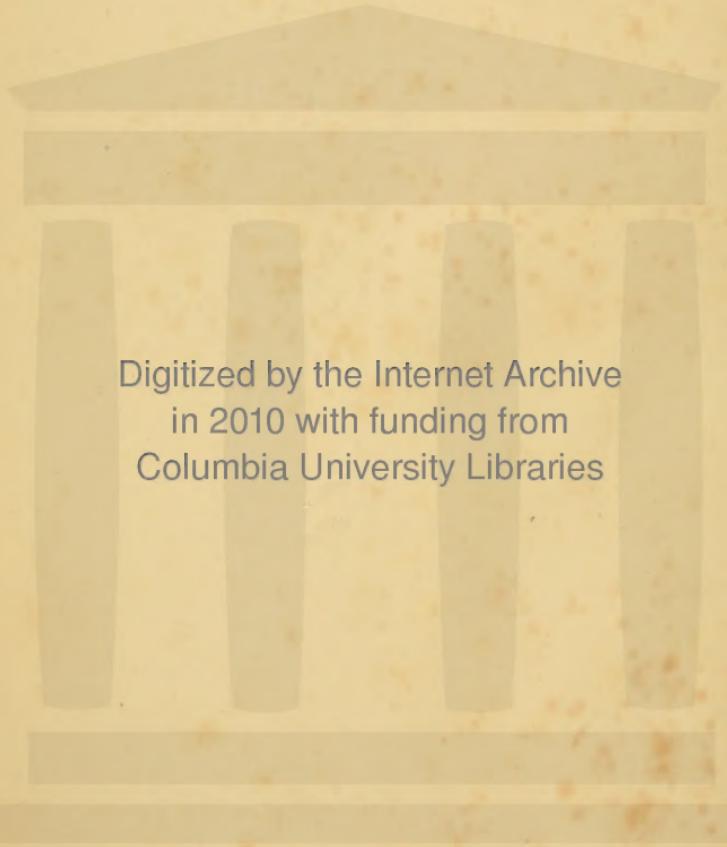
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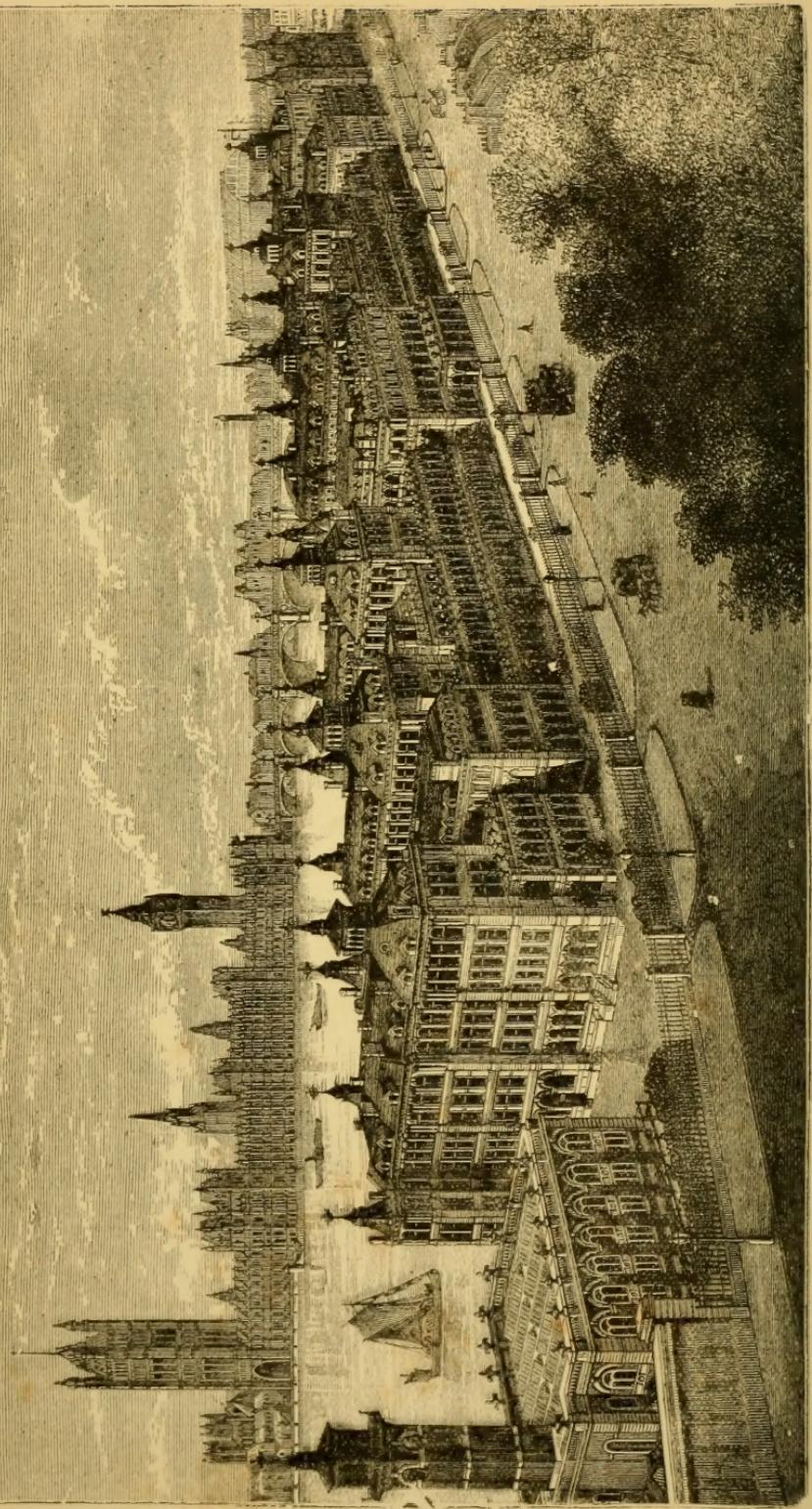


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New Series.

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VOL. XXVIII.

L O N D O N :

J. & A. CHURCHILL, 7, GREAT MARLBOROUGH STREET,

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MEDICAL REPORT.

1899.

By A. E. RUSSELL, M.D., B.S.LOND., M.R.C.P., M.R.C.S.,
MEDICAL REGISTRAR.

TABLE I.—General Statement of Medical and Surgical Patients.

		Males.	Females.	Total.
Number of patients in Hospital, Jan. 1st, 1899	...	210	183	393
" " "	Dec. 31st, 1899	223	160	383
" " "	discharged or died during 1899:			
Cured	...	2117	1493	3610
Relieved	...	803	558	1361
Unrelieved or other causes	...	245	172	417
Died	...	343	202	545
		<hr/>	<hr/>	<hr/>
Total	...	3508	2425	5933
Average number of days of each medical patient's stay in hospital—		28·44.		
" " " surgical			"	22·16.

TABLE II.—General Medical Statement.

Number of Medical Beds ¹...	...	...	...	...	200
				Males.	Females.
Number of patients in Medical Wards, Jan. 1st, 1899	...	87	...	65	... 152
" " " admitted during the year 1899	...	1193	...	730	... 1923
		<hr/>	<hr/>	<hr/>	<hr/>
Total	...	1280		795	2075
" " " in Medical Wards, Dec. 31st, 1899	...	85	...	54	... 139
" " " treated to a termination during 1899	1195	...	741	...	1936
" " " discharged or died during 1899:					
Cured	...	564	386	950	... 49·07
Relieved	...	278	182	460	... 23·76
Unrelieved or other causes	...	150	65	215	... 11·10
Died	...	203	108	311	... 16·06
		<hr/>	<hr/>	<hr/>	<hr/>
Total	...	1195	741	1936	

Average number of days of each patient's stay in hospital—28·44.

¹ This does not include 29 beds in Adelaide Ward, the statistics of which are given in the Report of the In-patient Department for the Diseases of Women.

TABLE III.—*General*

DISEASE.	Number of cases.			Age.			Duration of residence.												
	Total.	M.	F.	Under 5	5-10	20	>30	>40	>50	>60	Above 60	Under 1 week.	Wks. 1-2	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above 1 year.
I. GENERAL DISEASES.																			
Measles	4	3	1	4	...	...	...	2	...	2	...	...	...	...	...	...	...	...	...
Scarlet fever	4	2	2	...	2	2	...	3	...	1	...	...	...	...	...	...	...	...	...
Influenza	56	32	24	...	14	28	8	5	...	1	18	28	10	...	...	...	...	...	...
Enteric fever	71	46	25	1	6	2	29	12	2	1	...	4	7	5	31	23	1	...	...
Diphtheria	94	43	51	57	24	4	8	...	1	...	17	2	22	31	21	1	...	...	...
Diphtheritic paralysis .	15	11	4	3	4	4	3	1	...	...	...	1	8	6	...	...	...	...	...
Fever of doubtful nature .	11	9	2	3	1	2	2	2	1	...	7	2	1	1	...	...	...	...	...
Whooping-cough	9	3	6	6	2	1	...	...	...	...	7	2	...	...	...	...	...	...	...
Malaria	6	5	1	...	...	5	1	...	...	...	1	2	2	1	...	...	...	...	...
Syphilis	4	2	2	...	...	1	3	...	...	...	1	...	2	1	...	...	...	...	...
Acute rheumatism	81	49	32	2	6	36	22	11	3	1	...	7	38	32	4	...	...	...	...
Chronic articular rheuma- tism	3	1	2	...	...	1	...	1	...	1	...	1	1	1	...	...	...	...	...
Muscular rheumatism	3	3	...	...	...	2	...	1	...	2	...	1	...	...	...	...	...	...	...
Chronic arthritis in child .	1	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Osteo-arthritis	8	4	4	...	...	2	2	1	...	3	1	1	1	3	2	...	...	...	...
Gonorrhœal rheumatism .	3	3	...	...	...	1	1	1	...	1	...	1	1	1	...	...	...	...	...
Gout	11	11	...	...	...	1	5	2	3	1	1	5	1	3	...	...	...	...	...
Rickets	2	2	2	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...

Table of Diseases.

Cured.	Re-lieved.	Unre-lieved.	Died.	REMARKS.	
M.	F.	M.	F.	M.	F.
1	1	1	1	Laryngitis and bronchitis in fatal case. For other cases, see "Diphtheria" (p. 41), and Table V.	
..	1	2	1	Including 1 student and 1 nurse; in the latter originating in hospital, see Table V. Cases unrelieved transferred to Fever Hospital.	
31	24	..	1	Suspected enteric fever in 7. Abdominal symptoms prominent in 8; pneumonitis in 1, keratitis in 1, haematuria in 1, haemorrhage from rectum in 1. Pneumonia in the fatal case.	
36	22	..	10	See Special Abstract (p. 41). For cases originating in hospital, see Table V and "Anæmia," "Pernicious anæmia" (p. 50), and "Gastric ulcer."	
33	39	..	10	See Special Abstract. For cases originating in hospital, see Table V, "Chorea," and "Peripheral neuritis."	
10	3	1	1	In the fatal case no P.M.	
9	2	..	..
..	1	1	4	Of cases discharged: broncho-pneumonia in 3, renal calculus in 1. Broncho-pneumonia and pleurisy in fatal case.	
5	1	..	..	All contracted the disease abroad.	
..	1	2	1	One male had previously been an in-patient in 1897 and 1898; in the other male, congenital syphilis with enlarged liver and spleen and periostitis of tibia.	
47	31	1	1	40 were cases of first attack, and in 22 of these there was evidence of mitral disease, associated in 2 with pericarditis; pericarditis alone occurred in 2 more; aortic disease in 2, pleural effusion in 2, subcutaneous nodules in 2, erythema nodosum in 1, simple erythema in 1, transient albuminuria in 4, history of chorea in 2. 23 were cases of second attack, and in 14 of these there was evidence of mitral disease, in 1 of mitral and aortic disease; pericarditis in 4, associated in the fatal case with pneumonia; subcutaneous nodules in 1, simple erythema in 1, transient albuminuria in 3, bronchitis in 1, history of chorea in 1. Of the 18 cases of third or later attacks: mitral disease was present in 7, associated in 1 with pericarditis, pericarditis alone in 2, aortic disease in 2, aortic and mitral disease in 2, pleurisy in 1, cerebral embolism in 1, arthritic atrophy in 1, tonsillitis in 1, chorea or history of it in 2.	
..	1	1	1	In the male wide-spread affection of joints with exophthalmos (see Special Abstract, p. 45); mitral disease in one female.	
3	..	..	..	Lumbago 2, pleurodynia 1.	
..	1	..	..	See Special Abstract (p. 46).	
..	2	3	2	1	1 male admitted twice; considerable muscular atrophy in 1 male; spondylitis deformans in 1 female; slight enlargement of spleen and axillary glands in 1 female (see Special Abstract, p. 47).
1	1	1	..		
5	6	..	..	Chronic nephritis in 2.	
..	2	..	..

TABLE III—

continued.

Cured.	Re-lieved.	Unre-lieved.	Died.	REMARKS.
M.	F.	M.	F.	M.
.....	3	2	1	1
1	3	1	2	3 Of cases discharged: 1 male had been an in-patient in 1898; phthisis in 1, optic atrophy in 1, eczema in 1, coma in 1. Of fatal cases: coma in all.
5	2	8	.....	2 Of cases discharged: pregnancy in 1, haemorrhage from mouth in 1, from rectum in 1, haematuria in 1. For fatal cases see Special Abstracts (p. 48).
1	1	1	1	2 Of the females: dyspepsia in 5, mitral disease in 2, enlarged spleen in 1, enlarged liver and spleen in 1; enteric fever contracted in hospital in 1 (see Table V).
1	1	1	1	2 For the female cured see Special Abstract (p. 50). In the male relieved, the blood-count improved from 960,937 to 2,788,185 red corpuscles per cubic millimetre, and the haemoglobin from 10-20 per cent. to 70 per cent. Delusions occurred in the female relieved. Of the fatal cases: hydrothorax and hydropericardium in 1, spleen enlarged in 1, fatty degeneration of heart in 1.
1	3	1	1	1 Dyspnoea from pressure on trachea in female.
1	1	1	1	2 For the female relieved and cured on readmission, see Special Abstract (p. 51). Of the males: splenic type in 1, lymphatic in 1, admitted twice. For the fatal case see Special Abstract (p. 52).
1	1	1	1	2 Of fatal cases: old tubercular lesions in all; tubercles widely distributed in all; cerebral meninges affected in all. For other cases see "Chronic nephritis" and "Tubercular meningitis."
1	1	1	1	Contracted in India. See also "Congenital heart disease"—same case.
1	1	1	2	In the male: mediastinal lympho-sarcoma, pressure on right bronchus with bronchiectasis, secondary growths in pleura and kidneys. Of the females: in one malignant disease of head of pancreas extending into thorax and invading pleura and left lung, also appendix abscess; in the other, carcinoma of left kidney with secondary nodules in right kidney, in lungs, and in the lumbar muscles, extending from the latter position to the spinal canal, with pressure myelitis.
1	1	1	1	Gout and albuminuria in 1.
1	1	1	1	In-patient in 1885 for same.
1	1	1	1	In-patient in 1897 with pneumonia.

TABLE III—

DISEASE.	Number of cases.			Age.						Duration of residence.									
	Total.	M.	F.	Under 5	5-10	20	30	40	50	60	Above 60	Under 1 week.	Wks. 1-2	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above 1 year.
III. DISEASES OF THE RESPIRATORY SYSTEM.																			
Simple laryngitis . . .	9	6	3	3	3	1	2	...	...	2	3	2	2	...	...	...	...	...	...
Papillomata of larynx . . .	1	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Tubercular laryngitis . . .	1	...	1	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...
Laryngismus stridulus . . .	1	...	1	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Acute bronchitis . . .	19	9	10	6	1	5	5	1	1	3	7	7	1	1	...	...	...	...	...
Chronic bronchitis . . .	23	12	11	...	...	3	6	7	7	3	6	9	5	...	...	...	...	...	...
Bronchiectasis . . .	3	2	1	...	2	...	1	...	...	...	1	...	2	...	...	...	...	...	...
Broncho-pneumonia . . .	31	18	16	27	5	...	1	...	1	...	5	9	16	3	1	...	...	...	...
Acute pneumonia . . .	115	91	24	5	20	25	22	22	17	2	2	30	17	45	23	...	...	...	...

continued.

Cured.	Re-		Unre-		Died.	
	M.	F.	M.	F.		
5	3	...	1	...	1	male admitted subsequently for enteric fever; 5 were admitted for suspected laryngeal diphtheria; whooping-cough in 1 female. In the fatal case pulmonary collapse.
1	...	...	1	...	...
1	...	...	1	...	...
8	9	...	1	1	1	Of cases discharged: pleurisy in 1, ascites in 1. Of fatal cases: chronic nephritis in 1; no P.M. in 1.
8	10	...	4	1	1	Of fatal cases: chronic nephritis and visceral gummata in 1; no P.M. in 1.
2	...	...	1	1	1	Of cases discharged: resection of rib and evacuation of pus in 1. In the fatal case: general dilatation of the bronchi in the left lung, with small localised empyema and septic broncho-pneumonia. For other cases see "Broncho-pneumonia" and "Intussusception."
13	13	...	5	3	1	Of fatal cases: some dilatation of the smaller bronchi in 1, interstitial emphysema in 1.
66	16	...	25	8	17	Situation: right lung 48, left 50, both 17. Of cases on right: in 14 upper, in 17 lower, in 8 middle and lower, in 2 upper and middle, and in 7 all three lobes were involved. Of cases on left: in 5 upper, in 43 lower, and in 2 both lobes involved. Of cases on both sides: in 1 both upper, in 7 both lower, in 4 one left lobe and entire right lung, in 1 left lower and right lower and middle, in 2 left lower and right upper, in 1 both lungs with exception of right middle, in 1 left upper and right upper and middle were involved. Crisis on 4th day in 1, on 5th in 7, on 6th in 4, on 7th in 12, on 8th in 11, on 9th in 4, on 10th in 2, on 11th in 2, on 12th in 1. In remaining non-fatal cases, either lysis occurred, or resolution was delayed, or patient was admitted at end of attack. Of cases cured: empyema in 1, residual signs in 1, delirium in 14, delirium tremens in 1, pericarditis in 2 (associated in 1 with acute rheumatism, chorea, and mitral disease), mitral disease in 3 others, transient albuminuria in 19, diarrhoea in 1, otitis media in 3 (associated in 1 with parotid abscess), gout in 1, enteric fever was suspected and negatived in 8. Of fatal cases: pleural effusion in 2, empyema in 1, pericarditis in 2, myocarditis in 1, acute endocarditis in 4, old endocarditis in 3, calcareous nodules in lung in 1, clot ramifying throughout the pulmonary artery and its branches in 1, cerebral embolism in 1, cirrhosis of liver in 2, nephritis in 9, positive Widal's reaction, but no evidence post-mortem of enteric fever in 1, terminal diarrhoea in 1. No P.M. in 1.

REMARKS.

TABLE III—

DISEASE.	Number of cases.			Age.						Duration of residence.										
	Total.	M.	F.	Under 5	5-10	10-20	20-30	30-40	40-50	50-60	60	Above 60	Under 1 week	Wks. 1-2	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above 1 year
III. DISEASES OF RESPIRATORY SYSTEM—<i>continued.</i>																				
Pulmonary tuberculosis	39	29	10	...	5	16	11	7	...	4	6	14	8	7	...	...	...	...	...
Hæmoptysis	9	7	2	...	5	4	...	...	1	1	7	...	...	...	...	...	...	...	...
Pleurisy	47	39	8	2	7	10	6	9	8	5	...	1	4	24	18	...	...	...	...
Empyema	15	8	7	2	4	3	...	4	2	...	...	...	2	6	5	2	...	...	...
Abscess of lung	3	2	1	...	...	2	1	...	...	...	...	1	2	...	...	...	...	...	...
Pneumothorax	1	1	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Obscure consolidation of lung	1	1	...	...	...	1	...	...	1	...	...	1	...	...	...	...	...	...	...
Foreign body in bronchus	1	...	1	...	1	...	...	1	...	...	1	...	...	...	...	...	...	...	...
Malignant disease of lung	2	2	...	...	2	...	...	...	...	...	1	1	...	...	...	...	...	...	...
Intra-thoracic growth	3	3	...	...	1	2	...	...	1	...	1	1	...	...	...	...	...	...	...

continued.

Cured.	Re-		Unre-		Died.		REMARKS.
	M.	F.	M.	F.	M.	F.	
.....	16	8	1	1	12	1	Of cases discharged: pneumothorax in 1, haemoptysis in 3, tubercular ulceration of tongue in 1, tubercular arthritis in 1, melancholia in 1, cystitis in 1, albuminuria in 2. Of fatal cases: in 12 both lungs were involved, cavities in both lungs in 3, in one lung in 7, ruptured aneurism of branch of pulmonary artery in 1, tracheal ulceration in 1, pleural effusion in 3, pyopneumothorax in 1, haemoptysis in 1, tubercular peritonitis in 1, tubercular enteritis in 2, chronic nephritis in 1, syphilitic liver in 1, congenital heart disease in 1. No P.M. in 1.
6	2	.....	1	..	.....	.....	Phthisis in 8, cause doubtful in 1. In fatal case: cavities at both apices. For other cases see "Pulmonary Tuberculosis."
31	6	7	2	1	.....	.....	Right-sided 21, left-sided 26. Aspiration: once in 18 patients, twice in 2 patients, 3 times in two. Thickened pleura in 2 (one admitted 3 times), mitral disease in 2, pericarditis and acute rheumatism in 1, malignant disease of pelvis in 1, transient albuminuria in 4.
6	5	1	.....	1	1	1	Right-sided 6, left-sided 7, bilateral 2. Resection of rib in 14, preceded in 3 of which by aspiration. In case unrelieved aspiration only. Of fatal cases: in the male left pyopneumothorax, with a dilated bronchus communicating directly with the pleural cavity, recent empyema and gangrenous pneumonia on right side; in the female left pneumonectomy had been performed; tuberculosis of right lung.
.....	2	.....	.....	1	.....	.....	Of the males: resection of rib in 1, intra-tracheal injections in 1, hemiplegia in 1. In the fatal case: abscess cavity in left upper lobe, more recent and smaller cavities in lower lobe, old fibrous tubercle at right apex.
.....	1	.....	.....	.....	.....	.....	For other cases see "Pulmonary Tuberculosis" and "Empyema."
.....	1	.....	.....	.....	.....	.....	In-patient in 1897.
.....	1	.....	1	1	.....	.....	The patient unrelieved died shortly after leaving hospital. In the fatal case: extensive growth (malignant lymphoma) of right lung, pleura, and thoracic parietes, with secondary infection of glands of neck, axillæ, groins, and abdomen; right-sided hydrothorax.
.....	1	.....	2	..	.....	.....	Patient unrelieved, also in-patient in 1898. Of fatal cases: in 1 lympho-sarcoma of bronchial glands with gangrene of right lower lobe, one knee-joint full of pus; in the other the posterior mediastinal glands were primarily affected with lympho-sarcoma, invading the root of the left lung and the left lower lobe; two small secondary growths in liver.

TABLE III—

continued.

Cured.	Re-lieved.	Unre-lieved.	Died.	REMARKS.
M. F.	M. F.	M. F.	M. F.	
3	5	1	2	History of rheumatism in 6, and 2 more were suffering from it on admission; history of chorea in 2. Of cases discharged: 1 case admitted twice; mitral disease in 4, mitral and aortic disease in 2, pleural effusion in 1. Of fatal cases: 23 ounces of serum in pericardium in 1 (death sudden in this case), old and recent endocarditis in 2, recent endocarditis alone in 1, hydrothorax in 2. For other cases see "Mitral incompetence" and "Chronic nephritis."
....	2	....	2	History of rheumatism in 4, of chorea in 1. The case relieved was admitted twice. Of fatal cases: adherent pericardium and mediastinitis in 3, adherent pericardium alone in 1. In 1 the condition was tuberculous in origin, and associated with tuberculosis of lungs, pleurae, bronchial glands, and cerebral meninges. In 3 the heart was dilated and hypertrophied, and the mitral valve incompetent from dilatation; 2 of these had been in-patients in previous years with diagnosis of mitral and aortic disease, but <i>post-mortem</i> the aortic valves were free from disease. Serous effusions in 1, broncho-pneumonia in 1, splenic infarction in 1, passive congestion of viscera in 3. For other cases see "Mitral stenosis and incompetence" and "Mitral and aortic disease."
....	1	4	....	History of rheumatism in 4. One female had been an in-patient in 1897 and 1898. Bronchitis in 1, pulmonary tuberculosis in 1.
....	20	13	1	History of rheumatism in 23. Of cases discharged: 2 had been in-patients in previous years. During the year 3 patients were admitted twice, one dying on readmission; 1 was admitted four times. Pericarditis in 4, hydrothorax in 4, albuminuria in 14, oedema in 12, ascites in 5, bronchitis in 8, acute rheumatism in 2, rheumatic nodules in 1, pneumonia in 1, femoral thrombosis in 1, delirium in 1. Of fatal cases: recent endocarditis in 1, parietal pericardium adherent to chest wall in 1, oedema in 4, ascites in 3, hydrothorax in 2, chronic nephritis in 1, passive congestion of viscera in 3. No P.M. in 1.
....	7	9	1	History of rheumatism in 15, of chorea and rheumatism in 2. Two had been in-patients in previous years. During the year 2 patients were admitted twice and 1 three times (fatal). Of cases discharged: oedema in 5, albuminuria in 7, ascites in 1, bronchitis in 5, erythema nodosum in 1. Of fatal cases: simple adherent pericardium in 1, hydrothorax in 1, pulmonary infarctions in 1, passive congestion of viscera in 2.

TABLE III—

DISEASE.	Number of cases.			Age.						Duration of residence.						Under 1 week.			
	Total.	M.	F.	Under 5			5-10			10-20			Above 60			Under 1 week.			
IV. DISEASES OF THE CIRCULATORY SYSTEM—continued.																			
Valvular disease of heart— <i>continued.</i>																			
(d) Aortic disease	18	12	6	...	...	...	6	5	4	...	3	1	3	6	7	1	...	...
(e) Aortic and mitral disease	31	19	12	...	3	9	4	6	6	2	1	6	3	12	4	5	1
Ulcerative endocarditis	7	6	1	...	1	3	1	1	1	...	1	2	3	...	2	...	...	...

continued.

Cured.	Re-		Unre-		Died.		REMARKS.
	M.	F.	M.	F.	M.	F.	
.....	7	5	2	...	3	1	History of rheumatism in 7, of rheumatism and chorea in 1. Of cases discharged: 1 had been an in-patient in previous years. During the year 1 patient was admitted three times. Bronchitis in 1, epistaxis in 1, angina pectoris in 2, possible thoracic aneurysm in 2, possible abdominal aneurysm in 1, oedema in 1, acute rheumatism in 1, dementia in 1. Of fatal cases: aortic incompetence in all, recent aortic endocarditis in 1, aortic atheroma in 2, pulmonary infarctions in 1, parietal pericardium adherent to sternum in 1, haemorrhage into ileum and jejunum from thrombosis of mesenteric arteries in 1, acute nephritis in 1. No P.M. in 2.
.....	12	7	....	7	5	5	History of rheumatism in 15, of chorea in 2, of chorea and rheumatism in 1 patient admitted four times. Four had been inpatients in previous years. During the year 3 patients were admitted twice (one fatal), one four times (fatal). Of cases discharged: albuminuria in 8, oedema in 7, ascites in 2, bronchitis in 2, probable gastric ulcer in 1, possible thoracic aneurysm in 1, fever subsiding after injections of anti-streptococcus serum in 1. Of fatal cases: aortic incompetence and mitral incompetence in 6; aortic incompetence and mitral stenosis in 1; incompetence and stenosis of aortic and mitral valves in 1; aortic stenosis and mitral incompetence in 1; aortic, mitral, and tricuspid stenosis in 1; acute endocarditis of aortic and mitral valves, with incompetence of the latter, in 2; acute endocarditis also in 5 of the other cases; pericarditis in 1, adherent pericardium in 1, partially adherent pericardium in 3; wound of right ventricle and hemo-pericardium from exploratory puncture for suspected pericardial effusion in 1; pulmonary infarctions in 4, renal infarction in 1, passive congestion of viscera in all, cerebral embolism in 1, hydrothorax in 4, ascites in 1, pulmonary tuberculosis in 1, chronic nephritis in 1.
.....	1	...	5	1	1	1	History of rheumatism in 1, otorrhoea in 1. Of fatal cases: no P.M. in one case with aortic and mitral incompetence, culture of streptococci obtained from the blood during life; of the remaining 5, evidence of old-standing valvular disease in 2. The main site of the lesion was the aortic valve in 3, the aortic and mitral valves in 1, the aortic and mitral valves and the ventricular wall in 1. Partially adherent pericardium in 1, cerebral embolism in 1; infarctions of spleen in 2, of kidney in 3; pleurisy in 1, pneumonia in 1, meningitis in 1, chronic nephritis in 1, spleen enlarged in 3, passive congestion of viscera in 3. In the female abdominal section was performed for suspected peritonitis.

TABLE III--

DISEASE.	Number of cases.			Age.			Duration of residence.												
	Total.	M.	F.	Under 5	5-10	10-20	20-30	30-40	40-50	50-60	Above 60	Under 1 week	Wks. 1-2	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above 1 year
IV. DISEASES OF THE CIRCULATORY SYSTEM — continued.																			
Congenital heart disease	6	5	1	5	1	1	—	—	—	—	3	2	1	—	—	—	—	—	—
Cardiac dilatation	2	2	—	—	—	—	2	—	—	—	—	—	2	—	—	—	—	—	—
Myocarditis	2	2	—	—	—	—	2	—	—	—	1	—	1	—	—	—	—	—	—
Rupture of heart	1	1	—	—	—	—	—	—	—	—	1	—	1	—	—	—	—	—	—
Tachycardia	2	2	—	—	—	—	2	—	—	—	—	—	1	—	1	—	—	—	—
Palpitation	1	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—
Thoracic aneurysm	24	24	—	—	—	—	7	10	5	2	1	2	8	7	4	1	1	—	—
General arterial disease	13	10	3	—	—	—	2	6	5	1	2	5	2	2	1	—	—	—	—
Venous thrombosis	2	1	1	—	—	—	1	—	—	—	1	—	1	—	—	—	—	—	—

continued.

Cured.	Re- lieved	Unre- lieved.	Died.		
M.	F.	M.	F.	M.	F.
REMARKS.					
3		2	1	Of cases discharged: in one admitted twice (see also "Mumps") the red blood-corpuses were increased to 11,200,000 per cubic millimetre. Of fatal cases: pulmonary stenosis and deficient inter-ventricular septum in 1; single auricle, single ventricle, three lobes in both lungs, absence of spleen, and broncho-pneumonia in 1; patent foramen ovale, sclerosis of tricuspid valve, with ascites and passive congestion of viscera in 1.	
2				A readmission; bronchitis and oedema of legs.	
1		1		History of syphilis in the patient relieved. In the fatal case: heart much enlarged, mitral incompetence, slight arterio-sclerosis, early pericarditis, passive congestion of viscera.	
	1			Rupture $2\frac{1}{2}$ inches in length in the posterior wall of the right auricle, pericardium distended with blood. Heart much dilated and walls thinned, tricuspid cusps sclerosed, general anasarca and serous effusions, passive congestion of viscera.	
2					
1				History of acute rheumatism.	
18	4	2		History of syphilis in 7. Two had been in-patients in previous years; during the year four patients were admitted twice. Situation: ascending arch 6, junction of ascending with transverse arch in 1, transverse arch 14, junction of transverse arch with descending aorta 2, upper part of descending arch 1. Of cases discharged: in 1 pulsation was visible at the back of the thorax between the 5th cervical and the 4th dorsal vertebræ. Bronchitis in 7, oedema of legs in 2, pleural effusion in 1, albuminuria in 3. Of fatal cases: in 1 an aneurysm of the ascending arch ruptured into the right pleura; for the other see Special Abstract (p. 54).	
8		2	3	History of syphilis in 5. Of cases discharged: aortic murmur in 3, aortic and mitral in 1, angina pectoris in 1, transient monoplegia in 1. Of fatal cases: heart greatly enlarged in all, thrombosis of right main branch of pulmonary artery in 1, patent foramen ovale and tricuspid incompetence in 1, pulmonary infarctions in 2, syphilitic scarring of liver in 1, of larynx and bronchus in another, hydrothorax in 3, pulmonary tuberculosis in 1, miliary tuberculosis of pleura in 1, ascites in 1, interstitial nephritis in 1, pyonephrosis and cystitis in 1.	
1	1			The male had been discharged on December 8th, 1898, recovered from enteric fever; readmitted 22 days later for femoral thrombosis. Phlegmasia dolens in the female.	

TABLE III—

DISEASE.	Number of cases.			Age.							Duration of residence.								
	Total	M.	F.	Under 5	5-10	10-20	20-30	30-40	40-50	50-60	60-70	Above 70	Under 1 week	1-2 weeks	2-4 weeks	4-6 months	6-9 months	9-12 months	Above 1 year
V. DISEASES OF THE DUCTLESS GLANDS.																			
Simple bronchocele . . .	1	1	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..
Exophthalmic goitre . . .	8	1	7	..	2	2	3	..	1	..	1	1	2	1	3	..	..	..	..
Myxœdema . . .	4	1	3	..	..	2	1	1	..	..	..	..	1	2	1	..	..	..	..
Addison's disease . . .	3	2	1	..	..	1	1	1	..	..	..	..	1	1	1	..	..	..	..
VI. DISEASES OF THE DIGESTIVE ORGANS.																			
1. <i>Alimentary canal.</i>																			
Stomatitis . . .	1	1	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..
Pharyngitis . . .	1	..	1	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..
Tonsillitis . . .	26	11	15	1	..	3	18	3	1	..	..	..	9	13	4	..	..	..	..
Stricture of œsophagus .	8	8	..	..	..	..	..	1	2	3	2	..	2	1	2	1	2	..	..
Dyspepsia . . .	11	8	3	..	1	..	3	3	2	2	..	..	2	1	5	3	..	..	..
Gastric ulcer . . .	27	3	24	..	..	2	16	7	2	..	..	..	2	8	15	1	1	..	..
Duodenal ulcer . . .	7	5	2	..	..	2	3	1	..	1	..	..	5	..	2	..	..	..	..
Hæmatemesis . . .	10	9	1	..	..	2	2	3	3	..	..	..	1	3	4	2	..	..	..
Vomiting . . .	12	7	5	..	..	6	2	2	1	1	..	..	4	2	5	1	..	..	..
Malignant disease of stomach .	18	13	5	..	..	3	3	3	5	4	..	..	1	4	6	6	1	..	..

continued.

Cured.	Re- lieved.	Unre- lieved.	Died.	REMARKS.	
M.	F.	M.	F.	M.	F.
1	1	1	1	Mitral incompetence.	
1	5	1	1	Of cases discharged: mania in 1, glycosuria in 1, cardiac murmurs in 3. For fatal case see Special Abstract (p. 55).	
1	2	1	1	In the fatal case the thyroid gland had been removed eight years previously for "tumour:" extensive pulmonary tuberculosis, with large cavity in right upper lobe.	
	2	1			
1	1				
11	15			Includes 6 students, 6 nurses, 4 wardmaids.	
2	2	5	1	Of cases discharged: probable carcinoma in 6, tracheotomy in 1; 2 cases transferred to Surgical side for gastrostomy. In fatal case: ulcerating carcinoma two inches below bifurcation of trachea, communicating with a cavity in the mediastinum and with lower lobe of right lung, which was solid from confluent broncho-pneumonia; secondary growths in kidneys.	
2	2	6	1	Mitral incompetence in 1, cirrhosis of liver in 1.	
3	22	2		Enteric fever contracted in hospital in 1, see "Enteric fever" and Table V. Hæmatemesis or history of it in 23; perforation, peritonitis, operation and cure in 1, see "Lancet," April 1st, 1899; parotitis in 1, mitral incompetence in 1; one patient readmitted later for hysteria.	
1	1	1	3	Of cases cured: hæmatemesis in 1. The case unrelieved was transferred to the Surgical side with perforation and peritonitis; operation and recovery; see "Clinical Society's Transactions," 1900. For fatal cases see Special Abstracts (p. 56). For another case see "Subphrenic abscess."	
8	1	1	1	Cirrhosis of liver in 3, probable gastric ulcer in 3, possible malingering in 1.	
6	3	1	1	Melæna in 1, possibly due to duodenal ulceration; mitral incompetence in 1.	
1	1	6	1	Gastro-enterostomy in the male relieved. Of the cases unrelieved: exploration in Medical wards in 1; gastro-jejunostomy in 2, after transfer to Surgical side. Of the fatal cases: exploration in 1, pyloric growth in 4, pyloric growth with extension to stomach in 1, diffuse infiltration of stomach with similar condition of cæcum in 1, growth of lesser curvature near pylorus in 1, extensive growth of stomach not affecting the orifices, with perforation of anterior wall and acute peritonitis in 1, circumferential growth leading to hour-glass constriction of stomach in 1, secondary deposits in 5, malignant growth of ovary in 1, calculous hydronephrosis in 1, pleurisy in 1, ascites in 2, broncho-pneumonia in 2.	

TABLE III—

DISEASE.	Number of cases.			Age.						Duration of residence.														
	Total.			Under 5			5-10			10-20			20-30			30-40			40-50			50-60		
		M.	F.																					
VI. DISEASES OF THE DIGESTIVE ORGANS—continued.																								
1. Alimentary canal—cont.																								
Dilated stomach	3	3								2	1							2	1					
Gastric pain	6	6					1	2	3								2	2	2					
Diarrhea and vomiting	30	20	10	13	3	8	3	2	1			16	6	6	2									
Diarrhoea	10	6	4	9	1								4	3	2	1								
Ulcerative colitis	6	6					2	1	2	1							3	3	3					
Colic	5	4	1	1	2	1		1					3	1	1									
Constipation	15	5	10	1	4	4	1	2	1	2			5	5	4	1								
Intussusception	18	11	7	17	1								7	1	9	1								
Volvulus	3	2	1				1	2					3											
Obstruction, other forms .	8	5	3	1	1	1				2	1	2		4	1	1	2							
Malignant disease of intestine	9	6	3							4	3	2		4	3	2								

continued.

Cured	Relieved		Unrelieved		Died		REMARKS.					
	M.	F.	M.	F.	M.	F.						
1	...	2	...	...			Exploration in 1 case, but cause of the dilatation not ascertained.				
...	3	...	3	...	...					
18	10	...	2	...			Of cases discharged: bronchitis in 1, broncho-pneumonia in 1, lymphangitis of leg in 1, celiotomy for suspected intussusception in 1. Of fatal cases, both in infants: bronchitis in 1, pleural adhesions in 1.					
4	3	1	1	...	1	...	Fatal case: an infant.					
4	...	2	...	...			Contracted abroad in 4.				
4	1	...	...	...					
5	10	...	...	...					
6	3	...	5	4			Of cases cured: exploration in all; reduction of ileo-cæcal intussusception in 6; double intussusception occurred in 3 cases—in 1 an enteric intussusception was intussuscepted into the cæcum, 1 was combined ileo-cæcal and ileo-colic, and in 1 an ileo-cæcal intussusception was intussuscepted into the colon. Of fatal cases: operation in all; ileo-cæcal in 6, with reduction in 5, and resection of gangrenous gut in 1; ileo-colic in 1, reduced; enteric in 2, in one of which, with peritonitis, resection of gangrenous gut and lateral anastomosis were done; in the other in which the intussusception was reduced, acute bronchiectasis was present.					
...	...	2	1				Operation in all; peritonitis in all; sigmoid flexure involved in 1, cæcum in 1, small intestine in 1. No P.M. in the last.					
1	1	...	1	2	...	2	1	Of cases cured: operation in both; polypoid growth in sigmoid flexure in 1 (see Special Abstract, p. 60), impacted faeces in small intestine in 1. Colotomy in the case relieved, nature of obstruction undetermined. The cases unrelieved were transferred to the Surgical side for operation; strangulation by band in each; death after operation in each. Of fatal cases: operation in all; strangulation of a loop of ileum through a slit in the mesentery and tubercular peritonitis in 1, strangulation by Meckel's diverticulum with gangrene of gut and peritonitis in 1, strangulation by pelvic adhesions in 1.				
5	2	1	1				Situation: rectum 1, sigmoid flexure 5, hepatic flexure 1, cæcum 2. Of cases unrelieved: 5 were transferred to Surgical side, and of these colotomy was performed in 3 (one fatal); simple exploration in 1 (also fatal). Of fatal cases: colotomy in 1; pneumonia in 1, chronic nephritis in 1.					

TABLE III—

DISEASE.	Number of cases.			Age.						Duration of residence.									
	Total.	M.	F.	Under 5	5-10	10-20	20-30	30-40	40-50	50-60	60	Above 66	Under 1 week.	Wks. 1-2	Mts. 1-2	Mts. 2-4	Mrs. 4-6	Mts. 6-9	Mts. 9-12	Above 1 year.
VI. DISEASES OF THE DIGESTIVE ORGANS—continued.																			
1. <i>Alimentary canal</i> —cont.																			
Inflammation of vermiciform appendix	81	55	26	1	5	34	28	10	1	2	...	19	17	25	19	1	...	...	...
Subphrenic abscess	.	2	2	...	...	...	...	1	1	...	...	1	1	...	...	...	...	...	...
Membranous colitis	.	3	...	3	...	...	...	1	1	...	1	...	1	...	2	...	...	...	...
Hæmorrhage from bowel	.	2	1	1	2	...	...	...	...	...	...	1	...	1	...	1	...	...	...
Enteroptosis	.	2	...	2	...	...	...	1	1	...	1	...	1	...	1	...	1	...	...
2. <i>Peritoneum.</i>																			
Acute peritonitis	.	6	1	5	3	...	...	1	1	...	1	...	5	...	1	...	...	...	...
Tuberculous peritonitis	.	7	4	3	...	...	3	2	1	1	...	1	2	3	1	...	...	...	...
3. <i>Liver.</i> —Cirrhosis	.	30	16	14	...	1	...	4	13	2	10	3	9	5	9	4	...	...	...

continued.

Cured.	Re- lieved.	Unre- lieved.	Died.		REMARKS.
M.	F.	M.	F.	M.	F.
25	10	4	2	23	9 3 5
					First attack in 50, and of these 5 fatal; second attack in 12, and of these 2 fatal; recurrent attacks in 16; not ascertained in 3, and of these 1 fatal. Of the cases cured: exploration in 17, and of these: simple removal of appendix in 2 females; evacuation of local abscess in 8 males and 4 females (in one of the males intestinal obstruction developed later and was relieved by operation, see Special Abstract, p. 61); general peritonitis in 3 females (see 'Transactions of Medical Society,' 1899). Of cases relieved: all transferred to Surgical side after operation; removal of appendix in 2 females, evacuation of local abscess in 2 males and 2 females. Of cases unrelieved: transferred to Surgical side for removal of appendix, males 15, females 4; for local abscess, males 4 (subphrenic abscess in 1), females 4; for general peritonitis, 3 males (all fatal); in 1 female exploration on Medical side but appendix not found, transferred to Surgical side subsequently with passage of pus <i>per urethram</i> ; 1 male discharged at his own request. Of the fatal cases: exploration in all; general peritonitis in 7, local suppuration spreading to under surface of liver in 1. No P.M. in 2 females. For another case see "Disseminated malignant disease."
2					Gaseous abscess in 1, due probably to perforation of a duodenal ulcer, recovery without operation (see Special Abstracts); operation in the other, with removal of portion of carious rib.
1	2				
1	1				
1	1				
1		1			
1		1			
1		1			
1		1			
2	2	2	1		Operation in the case cured, cause undetermined. Of fatal cases: exploration in 3; cirrhosis of liver in one child (see Special Abstracts), perforation of a tubercular ulcer of ileum in 1, cause undetermined in the others; pleurisy in 2.
11	11	2	3	3	Tubercular enteritis in 1, tubercular salpingitis in 1 case explored. Two had been in-patients in previous years, and of these one died. During the year 1 case was admitted 7 times for paracentesis, 2 twice. Of cases discharged: ascites in 17, of whom 16 were tapped, one case for the 22nd time; albuminuria in 2, haematemesis in 6, delirium tremens in 1, dementia in 1, mitral incompetence in 1, bronchitis in 1, pleural effusion in 1, jaundice in 2, enlarged spleen in 2, syphilitic knee in 1. Of fatal cases: simple ascites in 3, ascites with purulent peritonitis in 1 child (see Special Abstract, p. 62), enlarged spleen in 1, jaundice in 1, free development of collateral circulation in adhesions between liver and diaphragm in 1, pelvic peritonitis in 1, delirium tremens in 1, peripheral neuritis in 1, haematemesis in 1, gout in 1, pleural effusion in 2, recent adherent pericarditis in 1, chronic nephritis in 1. For another case of cirrhosis of liver in a child see "Acute peritonitis."

TABLE III—

DISEASE.	Number of cases.			Age.						Duration of residence.																																		
	Total.	M.	F.	Under 5			5-10			10-20			20-30			30-40			40-50			50-60			60-Above 60			Under 1 week		Wks 1-2		Wks 2-4		Mts. 1-2		Mts. 2-4		Mts. 4-6		Mts. 6-9		Mts. 9-12		Above 1 year
VI. DISEASES OF THE DIGESTIVE ORGANS—continued.																																												
3. Liver—continued.																																												
Cholelithiasis	14	4	10														6	4	4					1	5	5	3																	
Catarrhal jaundice	1	1	1																					1																				
Obstructive jaundice	3	1	2														1	1	1					2		1																		
Abscess of liver	2	2	2														2							1	1																			
Malignant disease of liver	5	3	2														1	2	2					1	3	1																		
Elarged liver	1	1	1														1							1																				
4. Various.																																												
Abdominal tumour	15	11	4														1	2	8	1	3	1	3	7	3	1																		
Ascites	3	1	2														1	1	1					1		2																		
VII. DISEASES OF THE GENITO-URINARY SYSTEM.																																												
Acute nephritis	9	7	2	1	2	5	1																1	3	4	1																		

continued.

Cured.	Re-	Unre-	Died.			
M.	F.	M.	F.	M.	F.	REMARKS.
2	4	2	2	4	...	Colic in 7, colic and jaundice in 7. The cases unrelieved were transferred to the Surgical side for operation, and gall-stones were removed from the gall-bladder or common duct in 3; no stones discovered in 3, in one of whom death resulted from peritonitis.
1	1	1	1	1	...	Malignant disease of pancreas in the male; (cholecystenterostomy with complete disappearance of the jaundice. Enlarged spleen in the female, relieved; cholecystotomy and relief of jaundice. Enlarged liver in the female, unrelieved. For another case see "Malignant disease of liver."
2	...	2	...	...	...	Operation in both. Abscess situated in right lobe of liver in both, right empyema in both, pus around the head of the right kidney in 1, adhesions above and below liver in 1; intestines normal in both.
1	1	2	1	1	...	Of cases discharged: obstructive jaundice in the male; the female transferred to Surgical side for operation. Of fatal cases: in one male the liver was enormously enlarged, and secondary nodules were present in spleen, pancreas, and mediastinal glands; in the other male the growth was a melanotic carcinoma, and in this case one eye had been excised 14 years previously for melanotic growth. In the female the growth was secondary to rectal carcinoma operated on in 1894; no P.M. in this case.
1	...	...	...	...	...	Nature undetermined; albuminuria.
2	3	5	1	4	...	Of cases discharged: gummatous deposit round spleen, fatal on readmission in 1; cyst of lesser sac, incised and drained in 1; probable renal tumour in 1, carcinoma in 2, nature of tumour undetermined in 6; albuminuria in 1, oedema of legs in 1, mania in 1, ascites in 1. Of fatal cases: retro-peritoneal sarcoma with secondary deposits in liver in 1; gummatous perisplenitis infiltrating thoracic parietes, cirrhosis of liver, and ascites in 1; retro-peritoneal cysts (explored) and gangrene of lung in 1. No P.M. in 1.
1	2	...	...	...	...	Hydrothorax and oedema of legs with enlarged liver in the male; paracentesis in 2.
4	3	1	...	1	...	Acute interstitial nephritis in the fatal case, an infant.

TABLE III—

continued.

Cured.	Re- lieved.	Unre- lieved.	Died.	REMARKS.
M. F. M. F. M. F. M. F.				
... 35 11 2 1 15 6				Eight had been in-patients in previous years. During the year one case was admitted twice. Gout or history of it in 6, of plumbism in 2, of alcoholism in 3, of scarlet fever in 2, aged 4 and 13 years respectively. Of cases discharged: enlarged heart in 17, pericarditis in 1, œdema in 33, marked ascites in 7, renal retinitis in 2, uræmic convulsions in 1, uræmic dyspnoea in 1, mania in 1, delusions in 1, hydrothorax in 2, bronchitis in 4, headache in 3, hæmatemesis in 1, abdominal tumour in 1, gout in 3, ichthyosis in 1, acute rheumatism in 1, purpura in 1. Of fatal cases: in 4 no P.M.; in the remaining cases, with one exception, the surface of the kidney was granular; in 7 the combined weight of the kidneys was above 10 oz., in the remainder below; in 2 boys the weights were 3 and $3\frac{1}{2}$ oz. respectively (see Special Abstracts, p. 63); in 1 adult 3 oz.; in all the renal cortex was diminished either absolutely or relatively. Cardiac hypertrophy was present in 15, pericarditis in 2, acute endocarditis in 1, extensive pleural adhesions in 4, pneumonia in 1, pulmonary infarctions in 1, old phthisis in 3, hydrothorax in 5, old calcified empyema in 1, bronchitis in 1, acute miliary tuberculosis in 1, pyæmia in 1, cerebral haemorrhage in 1, cerebral softening in 1, ascites in 3, cirrhosis of liver in 1, gall-stones in 1.
1 1				Nephrectomy in the female; the male transferred to Surgical side for exploration.
... 1 1				Enormous hydronephrosis in the male, transferred to the Surgical side for nephrotomy; in the female one kidney had been removed some years previously.
... 1				Uræmic mania.
1				
... 1 2				In the male right kidney also affected, dilatation of right ureter; cystitis in 1 female, broncho-pneumonia in 1.
1 1				Nephrorrhaphy in the patient cured.
4 ... 3 ... 3				One case admitted twice. Of cases unrelieved: 2 were transferred to Surgical side for nephro-lithotomy.
... 3 1 1				Cause undetermined.
1				
1				
... ... 2				A readmission; abdominal pain, possibly renal calculus.
1				

TABLE III—

DISEASE.	Number of cases.			Age.			Duration of residence.				
	Total.	M.	F.	Under 5	5-10	11-20	21-30	31-40	41-50	51-60	Above 60
VIII. DISEASES OF THE NERVOUS SYSTEM.											
<i>1. Brain and membranes.</i>											
Pachymeningitis haemorrhagica	1	1	...							1	...
Chronic meningitis .	3	3	...	1	...	2	...	...	1	1	1
Tubercular meningitis .	13	8	5	5	4	4	...	...	9	2	2
Hemiplegia . . .	21	13	8	...	2	3	4	4	4	3	1
Cerebral haemorrhage .	3	2	1	...	...	1	...	1	1	1	1
Cerebral tumour . . .	6	2	4	...	2	...	3	1	...	1	1
Headache . . .	7	5	2	...	1	1	2	2	1	2	3
Cerebral abscess .	2	1	1	...	1	...	1	...	1	...	1
Cerebral syphilis . . .	2	2	...	...	...	1	...	1	...	2	...
Cerebellar disease . . .	2	2	...	...	...	1	...	1	1	1	...
Aphasia . . .	5	4	1	...	...	1	2	2	1	3	1

continued.

Cured.	Re-lieved.	Unre-lieved.	Died.	REMARKS.		
M.	F.	M.	F.	M.	F.	
1	...	Subdural haemorrhage, with false membrane lining internal surface of the clot; hypostatic pneumonia.				
3	...	Posterior basic meningitis, with distension of the ventricles in the child; chronic basal menigitis, wasting of left hemisphere, with epileptiform convulsions and mania in 1; cerebro-spinal meningitis, with secondary hydrocephalus in 1 (see Special Abst., p. 64).				
1	...	8	4	The patient relieved was diagnosed as a case of infantile convulsions, and discharged apparently cured; four days later she was admitted to a fever hospital, and died in 4 days; post-mortem, phthisis and tubercular meningitis. Of the fatal cases: cerebro-spinal distribution in 2, general tuberculosis in 5, evidence of old tuberculosis in 11, calculous hydronephrosis in 1; one case was trephined for suspected abscess. For other cases see "General tuberculosis."		
2	...	7	6	4	2	Right-sided in 14, with aphasia in 2, and some weakness of left leg in 2; left-sided in 7. Probably syphilitic in 5, including one case in a girl of 13 with congenital syphilis; embolic in 2; birth palsy in 1, a girl of 5. In one girl of 9, the right Rolandic area had been trephined in 1898 for left hemiplegia with convulsions; nothing was found, but the convulsions ceased after the operation; readmitted with left hemiplegia and return of convulsions. Albuminuria in 4, mitral disease in 1, aortic and mitral disease in 1, gout in 1, mania in 1.
	...	2	1	1	In 2 the haemorrhage originated in the left side of the brain, with extension into all the ventricles in 1; in the third the haemorrhage was basal, and there were three small aneurysms of the superior cerebellar artery; arterio-sclerosis in 2, contracted kidneys in 2, aspiration pneumonia in 1. For another case see "Chronic nephritis."	
1	3	1	1	1	For male unrelieved see Special Abst. (p. 65). Of fatal cases: in 1 a large tumour of the left hemisphere, extending from the fissure of Rolando to the occipital lobe with hydrocephalus; in 1 no P.M.	
2	1	3	1	1	1	Suspected meningitis in 1 male, cured.
	1	1	1	1	A temporo-sphenoidal abscess evacuated in the case relieved; subsequent return of symptoms, readmission on Surgical side, exploration and death. In the fatal case: four abscesses (see Special Abstract, p. 67).	
1	1	1	1	1	Headache, right-sided weakness, and parästhesiae in 1; optic atrophy in 1 (in-patient also in 1897). See also "Hemiplegia," etc.	
1	1	1	1	1	Ataxy in both, possible tumour in 1.	
2	1	2	1	2	Of the cases cured: arterio-sclerosis in both, no paralysis in either; motor aphasia in both; 1 admitted unconscious with right-sided clonic spasms; rapid recovery in both. Motor aphasia in case relieved. Of cases unrelieved: motor aphasia and mania in 1, possibly a general paralytic; word-deafness and word-blindness in 1.	

TABLE III—

DISEASE.	Number of cases.			Age.						Duration of residence.									
	Total.	M.	F.	Under 5	5-10	20	30	40	50	-60	Above 60	Under 1 week	Wks. 1-2	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above 1 year
VIII. DISEASES OF THE NERVOUS SYSTEM—continued.																			
1. <i>Brain and membranes—continued.</i>																			
Ophthalmoplegia . . .	1	1									1					1			
Optic atrophy . . .	1	1									1					1			
Optic neuritis . . .	1	1		1											1				
Birth-palsy . . .	1	1					1							1					
Athetosis . . .	1	1						1								1			
Brachial monoplegia .	2	2						1			1			1	1				
Spasm of hand . . .	1	1					1									1			
Crural monoplegia .	1	1									1				1				
Disease of pons . . .	2	2									1	1			1	1			
Bulbar paralysis . . .	1	1									1			1					
2. <i>General and functional diseases.</i>																			
Paralysis agitans . . .	3	3							1	2	...	1	1	1					
Vertigo . . .	1	1								1				1					
General paralysis . . .	5	5						1	1	3	...	1		3	1				
Mania . . .	4	3	1					1	1	2	4								
Delusional insanity .	3	1	2					2	1	...	2			1					
Dementia . . .	1	1							1					1					
Melancholia . . .	2	2					1	1					1	1					
Chorea . . .	17	4	13		4	13						1	2	1	8	3	1	1	

continued.

Cured.	Re-lieved.	Unre-lieved.	Died.	REMARKS.
M.	F.	M.	F.	
1	1	1	1	Some weakness of left leg also; no evidence of syphilis.
1	1	1	1	Admitted in the first instance to the Surgical side with concussion, followed by a convulsion; transferred to Medical side with optic neuritis; no other symptoms.
1	1	1	1	Transferred to Surgical side for tenotomy for talipes equinus. For another case see "Hemiplegia."
1	1	2	1	Left upper extremity and face involved.
1	1	2	1	Considerable muscular atrophy of left upper extremity in 1; in the other, a case of right brachial monoplegia, the left parietal region had been trephined in 1895 for depressed fracture.
1	1	1	1	Left hand and forearm rigid and contorted, left leg slightly spastic; transferred to Surgical side for tendon transplantation.
1	1	1	1	Probably syphilitic in origin. Paralysis of right facial nerve with weakness of left leg in 1; for the other, a case of basilar thrombosis, see Special Abstract (p. 68).
1	1	1	1	
3	1	1	1	Phthisis in 1, amyotrophic lateral sclerosis in 1.
1	4	1	1	Probable Menière's disease.
1	3	1	1	Apoplectiform attack in 1, ataxy in 1.
1	2	1	1	
1	1	1	1	Post-influenzal in 1, contracted visual fields in 1.
3	11	1	1	First attack in 10, second in 6, recurring in 1. In no case was there rheumatism or previous history of it, but in 4 cases there was a family history of rheumatism, and in 2 of chorea. Of cases discharged: evidence of mitral disease in 5, otitis media in 1, diphtheria contracted in hospital in 2 (see Table V). The male unrelieved was an intractable case; he had been an in-patient in 1898 for nine months, and was discharged cured; he was readmitted with recurrence of symptoms, and remained in the hospital for six months without any improvement. The female unrelieved was affected with chorea insaniens; transferred to infirmary. In the fatal case: acute mitral and aortic endocarditis, phthisis and tubercular enteritis.

TABLE III—

DISEASE.	Number of cases.			Age.						Duration of residence.										
	Total	M.	F.	Under 5	5-10	10-20	20-30	30-40	40-50	50-60	60-70	Above 70	Under 1 week	Wks. 1-2	Wks. 2-4	Mis. 1-2	Mis. 2-4	Mis. 4-6	Mis. 6-9	Mis. 9-12	Above 1 year
VIII. DISEASES OF THE NERVOUS SYSTEM—continued.																				
2. General and functional diseases—continued.																				
Hysteria	48	10	38	1	11	18	12	6	...	4	13	11	11	8	1	...	...	...	...
Epilepsy	12	11	1	...	2	2	4	2	2	...	8	4	...	...	...	...	...	...	...
Infantile convulsions	5	5	...	5	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...
3. Spinal cord.																				
Myelitis	6	4	2	...	...	4	1	...	1	...	1	3	1	...	1	...	...	...	...
Paraplegia	5	2	3	...	1	1	1	1	1	1	...	2	...	3	...	...	...	...	...
Chronic anterior polio- myelitis	3	3	...	...	1	1	1	1	1	1	...	1	1	1	...	...	...	...	...
Amyotrophic lateral sclerosis	1	1	...	...	...	...	1	...	...	...	...	1	...	1	...	...	...	...	...
Locomotor ataxia	10	9	1	...	...	6	3	1	...	2	1	2	3	2	...	...	...	...	...
Disseminated sclerosis	6	...	6	...	...	1	2	3	...	...	...	1	3	2	...	...	...	...	...
Syringomyelia	1	1	...	...	...	...	...	1	...	1	...	1	...	1	...	...	...	...	...
Hæmorrhage into cord	1	1	...	...	...	...	1	...	1	...	1	...	...	...	...	...	...	...	...
Malignant growth of vertebræ	1	1	...	...	...	1	...	...	...	...	1	...	1	...	...	...	...	...	...

continued.

TABLE III—

DISEASE.	Number of cases.			Age.						Duration of residence.			
	Total.			Under 5		5-10		10-20		20-40		40-60	
		M.	F.										
VIII. DISEASES OF THE NERVOUS SYSTEM—continued.													
<i>4. Peripheral nerves & muscles.</i>													
Sciatica	11	7	4					1	5	2	2	1	
Alcoholic neuritis . . .	7	2	5					6	1				3 1 2 1
Peripheral neuritis, other forms	7	3	4	1	1	1	1	2	1	1	1	2	3
Neuritis migrans . . .	1	1					1					1	
Facial paralysis . . .	1	1					1				1		
Torticollis . . .	3	2	1			1		1	1		1		2
Obstetric neuritis . . .	2	2					2				1	1	
Splint paralysis . . .	2	2					2				1	1	
Pseudo-hypertrophic paralysis	3	3		1	1		1		1		1	2	
IX. POISONING.													
Alcoholism	9	7	2					3	4	2	2	3	6
Plumbism	13	12	1				4	1	5	3	3	8	2
Turpentine	2	2	1					1			2		
White precipitate	2	1	1				1	1			2		
Ammonia	2	2	1					1			1	1	
Opium	4	3	1				2	1	1		4		
Morphinism	1	1					1				1		
Carbolic acid	4	2	2	2		2					3	1	
Hydrochloric acid	4	2	2	1		1			2	2	1		1
Belladonna	1	1				1				1			
Oil of tar	1	1	1							1			
Phosphorus paste	1	1					1			1			
Potassium permanganate .	1	1						1			1		
Bromoform	1	1		1						1			
Tobacco	1	1			1					1			

continued.

Cured.	Re- lieved.	Unre- lieved.	Died.	REMARKS.
I. F. M. F.	M. F. M. F.			
3 1 4 2 ... 1 ...	3 2 2			Acute febrile polyneuritis in 1 male; saturnine element present also. Of females cured: 1 transferred to Surgical side for tenotomy of tendo-Achillis. Of females relieved: delirium in 1, phthisis in 1.
1 2 2 1 ... 1 ...				Of cases cured: in the male, a boy of 6, wide-spread neuritis, cause undetermined; diphtheria contracted in hospital (see Table V). In the females: post-enteric in 1, post-influenzal in the other.
				Of cases relieved: lead neuritis in 1 male; cause undetermined in the others. Cause undetermined also in the female unrelieved.
1				
1		1 1		Probably of reflex origin in the male cured, a boy of 11; the torticollis disappeared after operation for removal of adenoids.
2				Spasmodic torticollis in the cases unrelieved.
2				Peroneal neuritis in both following childbirth.
3				A readmission; legs affected.
6 2 1 ...				Mania in 1.
11 1 1 ...				Including 5 painters and 1 printer. Colic in all, albuminuria in 4, tremors in 1, gout in 1, phthisis in 2, syphilis in 1. For other cases see "Alcoholic neuritis" and "Peripheral neuritis."
2				Suicidal in both.
1 1				Cellulitis of neck in 1.
2				Suicidal in 3.
3 1		1		Hypodermic syringe used.
1 2		1		Suicidal in the 2 females. In the fatal case: blackish-brown discolouration of mucous membrane of the summits of the folds of stomach and of upper 4 inches of duodenum; two patches of necrosis in the upper part of the oesophagus.
1	1		2	Tracheotomy in the case unrelieved, a child; subsequent readmission with laryngeal stenosis; death (see "Various surgical"). Of fatal cases: in 1 oedema of glottis, superficial necrosis from fauces to cardia, blackening of folds of stomach and duodenum, unilateral surgical kidney. For the other see Special Abst. (p. 73).
1				Suicidal.
1				1 Suicidal. See 'Lancet,' August 12th, 1899.
1				

TABLE III—

continued.

Cured.	Re-lieved.	Unre-lieved.	Died.	REMARKS.				
M.	F.	M.	F.	M.	F.			
1				Suicidal.				
1				Suicidal.				
2	1	1	1	Aural polyp in 1, otitis media in 4. Case unrelieved transferred to Surgical side with lateral sinus thrombosis and pyæmia; operation; death.				
2	5	4	1	15	5	6	1	The cases discharged include: hernia 1, sarcoma of undescended testicle 1, psoas abscess 1, adenoids 4, sacro-iliac disease 1, spinal caries 3, pelvic abscess 1, tumour of neck 1, acute bursitis 1, vesico-rectal fistula 1, abscess of abdominal wall 1, abdominal abscess 3, epistaxis 1, caries of ileum 1, osteitis of tibia and fibula 1, acute necrosis of femur 1, cystitis 3, retention of urine 1, vesical calculus 1, arthritis 2, cellulitis 1, haemorrhoids 1. Six cases were operated on on the Medical side, and 13 were transferred to the Surgical side. Of the fatal cases: operation in 3, suppurating subdiaphragmatic hydatid in 1, stenosis of larynx and bronchus in 1 (see also "Hydrochloric acid poisoning"), cellulitis of leg and pyæmic abscess of knee in 1, retro-peritoneal abdominal abscess in 1, strangulated inguinal hernia in 1, inflammation of fauces and adenitis in 1, cystitis 1.
4	2	3	2					
4	2			Suicidal in 2, mania in 1.	[tine in 1.]			
3	...	1	1	Possible cerebral disease in 1, possible malignant disease of intestines in 1.				
29	13	4	2	4	1	1	1	Of fatal cases: marasmus in male infant. In the female, admitted for abdominal pain, death due to chloroform syncope; fatty heart, and interstitial nephritis.
...	1		1	1	1	1	1	Operation for suppurating cyst in the case cured. Multilocular cyst in the case unrelieved; transferred to Surgical side for ovariotomy. In the fatal case: papilliferous ovarian cyst, with secondary deposits in peritoneum.
...		1	1	1	1	1	1	Sarcoma in the case unrelieved; transferred to Surgical side for ovariotomy. Operation in the fatal case: malignant growth of right ovary invading Douglas's pouch and abdominal glands; jaundice.
...		1	1					Transferred to Gynaecological side and left appendages removed.
...		1	1					Transferred to Gynaecological side for operation.
...	1		1					In fatal case: dense matting of pelvic organs, great thickening of broad ligaments, rent in sigmoid flexure, and acute peritonitis.
{ 564	{ 386	{ 278	{ 182	{ 150	{ 65	{ 203	{ 108	
950	460	215	311					

TABLE IV.—*Table of Mortality.*

DISEASE.	Total.		Age.						Mortality per cent.		
	Adults sons.	Deaths.	Under 2 ¹	2-5	6-10	11-20	21-30	31-40	41-50	51-60	61-70
1. GENERAL DISEASES.											
Measles	4	1	1	...	...	...	...	...	...	...	25
Influenza	56	1	...	...	...	...	1	...	...	...	1·78
Enteric fever	71	13	...	...	4	7	2	...	...	...	18·31
Diphtheria	94	22	10	7	4	1	...	...	...	...	23·4
Diphtheritic paralysis	15	1	...	...	1	...	...	...	...	...	6·66
Whooping-cough	9	1	...	1	...	...	...	...	...	...	11·11
Acute rheumatism	81	1	...	...	...	...	1	...	...	...	1·23
Diabetes mellitus	12	5	...	...	2	1	2	...	...	...	41·66
Purpura	7	2	...	1	1	...	...	...	...	...	28·57
Pernicious anaemia	6	2	...	...	...	...	2	...	...	...	33·33
Leucocythaemia	6	1	...	...	1	...	...	...	...	...	16·66
General tuberculosis	4	3	1	...	1	...	1	...	...	...	75
Disseminated malignant disease	3	3	...	...	1	1	1	...	...	...	100
2. DISEASES OF THE SKIN.											
Pemphigus	2	1	...	...	...	...	1	...	...	...	50
3. DISEASES OF THE RESPIRATORY SYSTEM.											
Laryngitis	9	1	1	...	...	...	...	...	...	...	11·11
Acute bronchitis	19	2	...	...	...	...	1	1	...	...	10·52
Chronic bronchitis	23	5	...	...	...	...	1	2	1	1	21·73
Bronchiectasis	3	1	...	...	...	...	1	...	...	...	33·33
Broncho-pneumonia	34	8	7	1	...	...	...	...	...	...	23·53
Acute pneumonia	115	33	1	...	3	2	3	9	13	2	18·10
Pulmonary tuberculosis	39	13	...	...	2	4	3	4	...	...	33·33
Hæmoptysis	9	1	...	...	...	...	1	...	...	...	11·11
Empyema	15	2	...	...	...	...	1	1	...	...	13·33
Abscess of lung	3	1	...	...	...	...	1	...	...	...	33·33
Malignant disease of lung	2	1	...	...	...	...	1	...	...	...	50
Intra-thoracic growth	3	2	...	...	...	...	2	...	...	...	66·66
4. DISEASES OF THE CIRCULATORY SYSTEM.											
Pericarditis	12	3	...	1	1	1	...	...	...	...	25
Adherent pericardium	6	4	...	...	3	1	...	...	...	...	66·66
Mitral incompetence	38	4	...	1	1	...	1	1	...	...	10·52
Mitral stenosis and incompetence	18	2	...	...	1	1	...	...	...	...	11·11
Aortic disease	18	4	...	...	2	1	1	...	...	...	22·22
Aortic and mitral disease	31	12	...	1	4	1	2	4	...	...	38·71
Ulcerative endocarditis	7	6	...	1	2	1	1	1	1	...	85·71

TABLE IV—*continued.*

DISEASE.	Total.	Age.							Mor-tal-i-ty per cent.
	Admis-sions.	Deaths.	Under 2	2-5	10-20	30-40	40-50	50-60	
4. DISEASES OF THE CIRCULATORY SYSTEM—<i>continued.</i>									
Thoracic aneurysm	24	2				2			8·33
Congenital heart disease	6	3	1	1		1			50
General arterial disease	13	5					4	1	38·46
Myocarditis	2	1	1				1		50
Rupture of heart	1	1	1				1		...
5. DISEASES OF THE DUCTLESS GLANDS.									
Exophthalmic goitre	8	1				1			12·5
Myxoedema	4	1				1			25
Addison's disease	3	3			1	1	1		100
6. DISEASES OF THE DIGESTIVE SYSTEM.									
Stricture of œsophagus	8	1						1	12·5
Duodenal ulcer	7	4			1	2	1		57·14
Malignant disease of stomach	18	9			1	3	3	2	50
Diarrhoea and vomiting	30	2	2						6·66
Diarrhoea	10	1	1						10
Intussusception	18	9	7	1	1				50
Volvulus	3	3			1	2			100
Obstruction, other forms	8	3		1	1		1		37·5
Malignant disease of intestine	9	2					1	1	22·22
Inflammation of vermiform ap-pendix	81	8	1	2	3	2			9·87
Acute peritonitis	6	5	3		1	1	1	1	83·33
Cirrhosis of liver	30	6		1		1	3	1	20
Malignant disease of liver	5	3				1	1	1	60
Abscess of liver	2	2			2				100
Abdominal tumour	15	4			1	1	1	1	26·66
7. DISEASES OF THE GENITO-URINARY SYSTEM.									
Acute nephritis	9	1	1						11·11
Chronic nephritis	70	21	1	1	5	1	3	7	30
Suppurative nephritis	3	3	1			1	1		100
Hydronephrosis	2	1				1			50
8. DISEASES OF THE NERVOUS SYSTEM.									
Chronic meningitis	3	3	1			2			100
Pachymeningitis haemorrhagica	1	1					1		...
Tubercular meningitis	13	12	2	2	4	4			92·30
Cerebral haemorrhage	3	3				1	1	1	100
Cerebral tumour	6	2			1	1			33·33

TABLE IV—*continued.*

DISEASE.	Admis-sions.	Deaths.	Total.	Age.								Mor-tal-ity per cent.
			Under 2	2-5	10	20	30	40	50	60	70	
S. DISEASES OF THE NERVOUS SYSTEM—<i>continued.</i>												
Cerebral abscess . . .	2	1						1				50
Chorea	17	1				1						5·88
Infantile convulsions . .	5	1	1									20
Myelitis	6	2					1		1			33·33
Malignant growth of vertebrae .	1	1						1				...
Hæmorrhage into cord .	1	1							1			...
9. POISONING.												
Carbolic acid	4	1		1								25
Hydrochloric acid	4	2				1			1			50
Potassium permanganate .	1	1							1			...
10. SURGICAL AND MISCELLANEOUS.												
Adenitis and tonsillitis . .	1	1	1									...
Strangulated hernia . . .	1	1	1									...
Abdominal abscess . . .	4	1						1				25
Cellulitis of leg	2	1								1		50
Cystitis	4	1								1		25
Suppurating abdominal hydatid	1	1						1				...
Stenosis of larynx, etc. .	1	1		1								...
Abdominal pain	31	1						1				3·22
Marasmus	1	1	1									...
11. DISEASES OF THE FEMALE GENERATIVE ORGANS.												
Pelvic cellulitis	2	1						1				50
Ovarian cyst	3	1								1		33·33
Malignant disease of ovary .	2	1						1				50

TABLE V.—*Cases of Infectious Disease originating in the Hospital.*

Initials.	Sex.	Age.	Disease for which admitted.	Disease originating in hospital.	Date of onset.	Duration of previous residence in hospital.	Result.	Remarks.
N. H. —K. —S.	F.	4 26 30	Diphtheria — —	Measles Scarlet fever Enteric fever	Dec. 3 Feb. 4 Nov. 28, 1898	16 days — —	C. Dec. 21 C. Apr. 10 C. Jan. 25	Contracted in Luke Ward. Sister Charity.
L. Y.	F.	28	Gastric ulcer	"	Dec. 25, 1898	15 weeks	C. Feb. 11	Contracted in Charity Ward.
R. W.	F.	19	Anæmia	"	Dec. 12, 1898	14 days	C. Mar. 10	Ditto.
A. H. A. W. A. H. G.	F. M. M.	22 6 27	Pernicious anæmia Torticollis —	Diphtheria	Nov. 1st Mar. 1 Oct. 28	4 months 11 —	C. Dec. 30 C. Apr. 8 C. Nov. 1	Contracted in Christian Ward. Contracted in Victoria Ward. House surgeon.
A. A. —S. —C.	M. F. F.	6 26 26	Peripheral neuritis — —	"	Sept. 18 Jan. 25 Dec. 19,	7 weeks — —	C. " 1 C. Feb. 14 C. Mar. 17	Contracted in Victoria Ward. Nurse. Ditto.
S. R. A. B. A. T. A. C. —J. A. H. H. F.	F. F. F. F. F. M. M.	59 9 18 16 26 56 27	Rodent ulcer Chorea — Chorea — Syringomyelia Chronic nephritis	" " " " " Erysipelas "	Mar. 9 Mar. 22 Apr. 19 Oct. 31 Oct. 31 Mar. 23 Oct. 26	4 weeks 11 — 24 days — 48 days 5 weeks	C. Apr. 15 C. " 23 C. June 29 C. Nov. 22 C. " 30 C. Apr. 27 D. Nov. 23	Contracted in Beatrice Ward. Contracted in Charity Ward. Wardmaid. Contracted in Charity Ward. Nurse. Contracted in George Ward. Ditto.

SPECIAL ANALYSES AND ABSTRACTS.

I. GENERAL DISEASES.

I. DIPHTHERIA.

During the year 94 cases of diphtheria were admitted, and of these 75 were treated with antitoxic serum. Of the cases not so treated, 14 were very mild cases, some in adults; 3 were admitted moribund; in 1 tracheotomy case with absence of diphtheria bacilli the diagnosis was only established *post mortem*, and in 1 fatal case death resulted from pleural effusion.

Of the 94 cases there were 22 deaths, a mortality of 23·4 per cent. Serum prepared at the laboratories of the Royal Colleges of Physicians and Surgeons was again used.

Since the introduction of antitoxic serum at St. Thomas's in January, 1895, 494 cases of diphtheria have been under treatment, serum being injected in 439 cases. Of the 494 cases the total number of deaths was 165 (including 14 fatal cases not treated with serum), a mortality of 33·4 per cent. The average mortality for 10 years preceding 1895 was 49·8 per cent.

Dosage of antitoxin.—Of the 75 cases treated with antitoxic serum in 55 the dose adopted was 8000 units; in 5 cases the dose was smaller, 6000 units in 2, 4000 in 3. In 1 case 9500 units were given. In 14 cases two injections were given, the total amounting in 1 case (fatal) to 10,000 units; in 8 to 12,000 (with 2 deaths), and in 5 to 16,000 units (with 3 deaths). An antitoxin rash occurred in 22 cases, in 3 of which it was of pustular type.

Eighty-eight of the 94 cases were submitted to a bacteriological examination. In 69 of them diphtheria bacilli were found; in 2 the culture was doubtful; in 17 no diphtheria bacilli were found.

In 55 cases the larynx was involved, and in 40 of these tracheotomy was performed, with 14 deaths. Of the 2 fatal laryngeal cases in which tracheotomy was not performed, in 1 death occurred in the Casualty department, and in 1 it was unnecessary. In the 6 remaining fatal cases the larynx was not involved.

Of the 94 cases, paralysis occurred in 20 cases, albuminuria in 26, bronchopneumonia in 12, pneumonia in 1, pleurisy with effusion in 1, apical empyema in 1, infantile convulsions in 1, epilepsy in 1, otitis media in 2, ringworm in 3,

adenitis in 1, whooping-cough in 1. Measles co-existed with diphtheria in 4, of whom 2 died; in 1 case cured measles was contracted in the hospital (see Table V).

The average duration of life after admission in fatal cases during the year was 8·45 days.

II. ENTERIC FEVER.

1. *General Summary of Cases.*

During 1899 the number of cases of enteric fever treated to a termination was 74, and the deaths were 13, giving a mortality of 17·56 per cent. Included in this series are 23 cases admitted for enteric fever in 1898, viz.: September, 1; October, 7; November, 4 (including one ward sister, who contracted the disease in the hospital); December, 11, with 4 deaths, 3 in January and 1 in April. Included also in this series are 3 cases, all ending in recovery, in which the disease was contracted in the hospital by patients admitted for other complaints (see Table V).

The admissions for enteric fever in 1899 were 57, and were distributed as follows:—January, 4 (1 death); February, 4 (1 death); March, 0; April, 2; May, 0; June, 3 (1 death); July, 3 (1 death); August, 8; September, 12 (1 death); October, 10 (1 death); November, 7 (1 death); December, 4 (2 deaths).

Of these 57 admissions 9 remained in hospital in 1900, and all ended in recovery.

The average duration of residence of the 71 cases treated to a termination (not including the 3 cases in which the disease was contracted by patients who had already been in some time for other complaints) was 50·59 days; of those which terminated in recovery 57·76 days, and of those which proved fatal 18·07 days.

The details as to age and sex incidence are given in Table III of this Report.

Of the deaths, 8 resulted from perforation of the bowel, death occurring on the 15th, 17th, 20th, 21st, 24th, 29th, 31st, and 33rd days of the disease. Four occurred from toxæmia—associated with haemorrhage in 2 (death on the 20th day in each) with hypostatic pneumonia in 1 on the 13th, uncomplicated in 1 on the 27th. One death occurred in the 18th week from prolonged abdominal suppuration.

Laparotomy was performed four times for perforation, with 1 recovery (see 'Lancet,' October 14th, 1899). Special Abstracts of the 3 fatal cases are given below.

Seventeen cases came under observation in the first week of the disease, 29 in the 2nd, 13 in the 3rd, and 15 later.

The onset in 15 cases was acute.

A profuse eruption was present in 19, a scanty eruption in 44, absent in 9, not recorded in 2. An erythematous rash appeared in 3.

Splenic enlargement was detected in 60 cases, absent in 14.

In 36 cases the tongue was described as typical. Diarrhoea was present in 26 cases, constipation in 36. Vomiting occurred during the course of the disease in 5 cases.

In 7 cases haemorrhage from the bowel was observed, the earliest instance being on the 11th day, and the latest on the 28th day of the disease. Epistaxis was noticed in 2 cases, bleeding from gums in 3.

Laryngitis was found in 1 fatal case. Bronchitis was more or less severe in 32. Pneumonia occurred twice, and hypostatic pneumonia was found in 4 of the fatal cases; pleurisy occurred in 2 of the fatal cases.

Transient albuminuria was present in 22 cases; albumen was also found in the urine of 8 of the fatal cases. Haemoglobinuria occurred in 1 case. Retention of urine occurred in 2 cases.

Periostitis of tibia occurred 3 times; arthritis in 2 cases; cutaneous abscesses developed in 7 cases, suppurative otitis media in 1.

Abdominal pain was present in 20 cases.

Headache was a prominent symptom in 16 cases; delirium was present in 21, associated with marked muscular tremors in 4, with delusions in 2, with retraction of head in 1.

The temperature exceeded 104° in 40 cases. The duration of fever whilst under observation varied from 2 to 40 days (excluding cases of prolonged fever from abdominal suppuration, periostitis, etc., and also the fever of the relapse), the average duration being 17·1 days, and the average maximum temperature 104°. The average maximum temperature of those who recovered was 103·9°, and of those who died 104·8°.

Rigors occurred during the course of the disease in 6 cases—on the 9th, 15th, 25th, 26th, 51st, and in 1 on the 33rd and 37th days. Femoral thrombosis occurred once.

True relapse occurred in 9 cases. The days of the relapse were—26th, 27th, 33rd, 36th, 41st, 43rd, 47th, 52nd, and 101st. (For the last case see 'Lancet,' October 14th, 1899.) The duration of the relapse varied from 9 to 23 days, the average duration being 15 days. The duration of the apyrexial period (in some cases slight irregular pyrexia persisted) varied from 3 to 24 days, the average being 9·2 days. The maximum temperature during relapse varied from 102° to 105°, the average maximum being 103·7°.

Of the fatal cases, in 12 the typical ulceration of the small intestine was found, in 1 the ulcers had healed; in 2 the colon was also ulcerated, and in 1 a healed ulcer was found.

2. *Enteric Fever; Three Cases of Perforation; Suture of Ulcer; Death.*

1. G. H. W.—, male, æt. 24. Admitted November 25th, died November 26th, 1899. Illness commenced 14 days before admission with headache and abdominal pain. He was treated for influenza, and did not go to bed. Three days before admission he was suddenly seized with abdominal pain, following a sudden movement in getting out of a train. The pain persisted, and he vomited occasionally on the next day and the day after.

When examined the abdomen was markedly distended below the umbilicus, the distension being greater on the left side. Abdominal respiratory movements were much impaired. The abdominal walls were very rigid and extremely

tender. Slight shifting dulness was present in the left flank. Heart and lungs normal.

Pulse 120, small and feeble. Temperature 98°.

The abdomen was opened by a median incision below the umbilicus; the coils of small intestine were found to be coated with lymph; they were distended and injected. A considerable quantity of pus had gravitated into the pelvis.

Two perforations were discovered close together about 15 inches above the ileo-cæcal valve. These were sutured and the abdomen irrigated.

His temperature rose to 104·2°. Death occurred 22 hours after the operation.

Post-mortem.—There was general adhesive peritonitis. On opening the intestine it was found to be healthy to within 18 inches of the ileo-cæcal valve. Here there was a small ulcer the size of a hemp-seed. The one which had perforated was a few inches further on; it was quite small, with intense surrounding inflammation. Two other ulcers were present in the last 6 inches of the ileum. No ulceration of colon. The left ventricle was hypertrophied, the mitral valve thickened, and on its cusps were several recent vegetations. A string of smooth, hard, old vegetations were present on the tricuspid valve.

2. R. B.—, male, æt. 18. Admitted December 7th; died December 14th, 1899. Illness commenced on Monday, November 27th, with headache, giddiness, and an attack of diarrhoea. He went to his work, however, until Saturday, December 2nd, but his back ached; and the giddiness and diarrhoea persisting, he consulted a doctor, who sent him home to bed.

When examined he looked ill. His tongue was dry and covered with brown fur in the centre, and white fur at the sides. There was a copious rose rash on the abdomen, chest, and back, and a few spots were also present on the arms. The abdomen was not distended nor tender; it moved normally with respiration. The spleen could not be felt. Heart and lungs normal. Pulse 88, small and soft. The urine contained no albumen. Temperature 101·8°.

On December 9th a simple enema was administered with good result. On December 11th he vomited twice in the morning. In the afternoon he complained of pain in the abdomen, and on examination some tenderness was found below the umbilicus, but there was no generalised tenderness; the abdomen was rather distended, rigid, and moved slightly with respiration. No liver dulness could be detected in the right nipple line. His tongue, however, was much cleaner, and his general aspect no worse. Pulse 108. He slept well during the night, and on December 12th he vomited in the morning. He was in no pain unless moved. The abdomen was still distended, and moved fairly with respiration; it was still rigid, and the tenderness was more general. Liver dulness was absent, and there was shifting dulness in the right flank. A thrill could be obtained across the lower part of the abdomen. His temperature varied daily from 100° to 103°; on the 12th it dropped from 103·4° to 98·6°, and on the 13th from 103·6° to 98·6°. He was operated upon in the afternoon of December 13th. Free gas and fluid of faecal character were found in the abdominal cavity; the small intestine was much distended, and was opened in three or four places to evacuate its contents. A perforation was found a few inches above the ileo-cæcal valve, and was sutured; another weak but unperforated spot was strengthened by sutures. The peritoneal cavity was washed out. His temperature, which at the time of operation was 102·4°, dropped the same night to

98°, and rose again to 101.8° at the time of his death. He vomited several times during the night after the operation, and his bowels also acted several times. He vomited a non-offensive, almost black fluid on the following day. Death occurred 24 hours after the operation.

3. S. M. J.—, female, æt. 24. Admitted October 21st; died October 22nd, 1899. It was impossible to obtain an accurate history, but her illness appeared to have commenced with indefinite symptoms three weeks before admission, when she took to her bed, and remained there for about a week ; after this she was up several times. Three days before admission there was a haemorrhage of about half a pint, but it could not be determined whether it was from the rectum or the vagina. The day after the haemorrhage her abdomen became very tender and vomiting commenced. When examined she was found to be in a collapsed condition, with rapid and feeble pulse, and cold extremities. The abdomen was distended, the abdominal respiratory movements were impaired, tenderness was general, liver dulness was absent, and shifting dulness was present in the flanks. Laparotomy was performed at 11 p.m. Free gas and a large quantity of faecal-smelling fluid were found in the peritoneal cavity. The intestinal coils were injected, and some were thickly coated with lymph. A perforation was found in the ileum, and sutured. The peritoneum was washed out with water, and a drain put in. Two pints of saline were infused at the end of the operation. Vomiting persisted after the operation, and death occurred at 6 a.m., seven hours after operation.

Post-mortem.—A considerable amount of lymph was present over the lower coils of the ileum. The sutured ulcer was situated twelve inches from the ileo-caecal valve. A pin-hole perforation was found at the lower end of the ileum, through which gas might have escaped, but there was no extravasation in its vicinity. Many typical ulcers were found in the lower fifteen inches of the ileum. The colon was not ulcerated. The uterus contained two embryos of the third month. The liver showed marked fatty degeneration.

3. *Enteric Fever complicated with Hæmoglobinuria; Recovery.*

H. P.—, male, æt. 30. Admitted October 26th; discharged November 29th, 1899. Illness commenced five days before admission with malaise and general pains, especially in the lumbar region. He took to his bed for three days, and then resumed work for one day ; but feeling worse, he came up to the hospital. For three days he noticed a change in the colour of his urine, which assumed a blood-coloured appearance, and its passage was attended with some pain. For four months he had been in the habit of passing water more frequently than usual, getting up also several times in the night to do so.

When examined there was no trace of œdema anywhere. A scanty rose rash was present on chest and back. The spleen was not enlarged, and the abdomen was not distended nor tender. The lungs were normal. The cardiac apex-beat was situated in the seventh intercostal space inside the nipple line, and a rough systolic murmur was audible at the apex. His tongue was moist and thickly coated with white fur. Pulse 92. The urine was examined in the Clinical Laboratory, and after centrifugalisation a considerable amount of granular

débris, numerous granular casts, and a few red blood-cells were found, but the latter in not nearly sufficient number to account for the blood colour. Spectroscopically oxyhaemoglobin was found to be present in fairly strong solution, and the bands of reduced haemoglobin were obtained on the addition of ammonium sulphide. On boiling there was a deposit of albumen of about one fifth. Specific gravity 1010. Two days after admission there was only a trace of albumen and blood, the colour being much lighter. The colour became progressively lighter, and on November 6th no blood could be detected, and merely a trace of albumen. On November 8th blood could again just be detected. From November 16th onwards the urine was normal. Widal's serum reaction for typhoid was not positive until November 7th. The urine passed on October 27th was examined bacteriologically, and cultures were prepared from it of an organism which conformed in all biological and morphological particulars with Eberth's *Bacillus typhosus*.

Several new spots appeared. The spleen at no time could be felt; the disease ran a mild course with no other complication, and the temperature became normal a fortnight after his admission to hospital.

III. CHRONIC ARTHRITIS.

1. *Chronic Rheumatism; Exophthalmic Goitre.*

W. J. C.—, male, æt. 37, engineer. Admitted April 10th; discharged May 18th, 1899.

Family history.—His mother had suffered from three attacks of rheumatic fever; his father had also suffered from sciatica and rheumatism.

Previous history.—He had had three attacks of inflammation of lungs before he reached the age of 20, and at that age he had measles. He had been unable to work, and under medical advice for rheumatism for five years, his illness commencing with swelling of knees and right wrist. This, his doctor told him, was acute rheumatism. Six months later he was sent to Bath, and subsequently to Buxton, as the joints showed no improvement. At times he was completely laid up in bed owing to the increasing pain and rigidity of his joints. The protrusion of eyeballs was of twelve months' duration, and six months after this was first noticed tremor of hands and palpitation developed. His neck had become somewhat swollen, and had been painted with iodine.

On admission he was fairly well nourished. There was some pain on movement in both shoulder-joints, but no swelling nor grating could be detected. The left elbow-joint could not be extended beyond a right angle, and flexion was very limited. There was no pain nor swelling in the joint. The left epitrochlear gland was enlarged. The left wrist was swollen, apparently by periarticular changes, and movement extremely limited. The right wrist was virtually ankylosed. The right forefinger was very stiff. The right ankle was swollen, very stiff, and tender on manipulation. The muscles around the affected joints were much atrophied, especially the intrinsic muscles of the hands. A considerable degree of exophthalmos was present in both eyes, and the eyeballs showed slight jerking movements. The neck was somewhat full in appearance, but no actual enlargement of the thyroid could be made out. A fine uniform tremor was present in both hands.

The cardiac apex-beat was situated in the fifth intercostal space internal to the nipple-line. A faint systolic murmur was audible at the apex, but was not conducted into the axilla. A harsher systolic murmur could be heard over the region of the pulmonary artery.

The spleen was not enlarged. Pulse 116 per minute. The urine contained a slight trace of albumen; no sugar. Temperature normal.

He was treated at first with salicylates and iodide, subsequently with arsenic and iron. Cod-liver oil was also given, and eucalyptus and olive oil were rubbed into the joints. Massage was also employed. At times he complained of considerable pain, but on the whole improved, and the urine became free from albumen.

2. *Chronic Arthritis in a Child; Enlarged Spleen and Glands; Temporary Recovery.*

E. W. B.—, male, æt. $5\frac{1}{2}$ years, admitted July 28th, discharged December 20th, 1899.

Family history.—His paternal grandfather was the subject of chronic rheumatism; a paternal aunt also subject to rheumatism. His father was not rheumatic, but one of the patient's brothers was said to have died from rheumatism following influenza.

In November, 1897, he had some illness described as muscular rheumatism, in which his hands were swollen. In April, 1898, he had an attack of bronchitis and pneumonia. From July to November, 1898, he attended Brompton Hospital for general debility. For six months preceding admission his mother noticed that his hands were occasionally swollen, and for the last two months of that period his hands and knees were persistently swollen and tender, and he became progressively paler and weaker. On admission he was extremely anaemic and looked very ill. The movements of the whole spine were impaired, particularly in the cervical region; flexion, and extension, and rotation of the head being very limited. He held his head bent slightly downwards, and could not raise it beyond the erect position; any attempts at forcible movement were attended with much pain. The whole of the spine was tender, and he could not sit upright in bed without support. Practically no movement could be performed at the right shoulder-joint. Both elbows were swollen. The wrists were swollen and painful, the swelling affecting the intercarpal and carpo-metacarpal joints more than the wrist-joint proper. There seemed to be much periarticular swelling. There was no redness of the skin. Movement at the right hip was painful. Both knee-joints were distended with fluid, the right more than the left. On the right side there seemed to be definite overgrowth of bone in the region of the condyles of the femur and the tibial tuberosities.

Only slight flexion was possible, and no crepitus or creaking could be felt. The muscles in the neighbourhood of the affected joints were flabby.

The spleen on deep inspiration descended about 1 inch below the left costal margin. The axillary glands on both sides were enlarged; they were fairly hard, and not tender. In the left groin one enlarged gland could be felt.

The cardiac apex-beat was situated in the 5th intercostal space, $1\frac{1}{2}$ inches

outside the nipple line, but no murmurs were audible. Lungs normal. Urine normal.

For a month or so the boy was very ill, and quite helpless. He was very subject to night terrors, which were greatly relieved by small doses of bromide of potassium. His temperature rose occasionally to 99° or 100°. He was given cod-liver oil, iron, and malt. Externally guaiacol and iodine were applied as a paint to the affected joints, and later Scott's dressing. Improvement was slow, but the joints steadily diminished in size; movement became more free; the pain disappeared; he gained in colour and weight, and became quite cheerful. Little or no improvement occurred in the spine, the movements remaining very restricted. The spleen diminished until it could be no longer felt, and the glands also became smaller. When discharged he could run about freely, and the joints had almost returned to the normal size.

He was readmitted in 1900 with a return of symptoms.

3. *Rheumatoid Arthritis.*

E. H.—, female, æt. 21, admitted September 20th, discharged November 21st, 1899.

Father alive, and subject to lumbago; mother affected with some chronic lung trouble. The patient was said to have had a sharp attack of rheumatic fever in February, 1889; this kept her in bed for one week, and her knuckles, knees, and ankles were very swollen, the swelling subsiding in about 6 weeks. In April, 1899, the joints again became swollen and painful, and in July she was compelled to give up her work as a school assistant; she was treated as an outpatient for a month, and then admitted. At times the joints would be free from pain, and the swelling would subside. When examined she was a well-nourished, healthy-looking girl. The metacarpo-phalangeal and interphalangeal joints of all the fingers of both hands were swollen, and slight grating could be obtained. The thumbs were not affected. The intercarpal and carpo-metacarpal joints were swollen, but the wrist-joints, elbows, and shoulders were free. The fingers showed marked tapering and glossy skin, and the intrinsic muscles of the hand were much atrophied. The knees and ankles were also swollen. There was not much effusion into the joints, the swelling apparently being in part due to thickening of synovial and perisynovial tissues. No lipping of bones could be detected. The cardiac apex-beat was situated in the 5th intercostal space, 1 inch internal to the nipple line; no murmurs were present. The edge of the spleen could be felt on deep inspiration, and the glands in the right axilla were slightly enlarged. Urine normal.

She was first treated with sodium salicylate and potassium iodide, but this was discontinued owing to headache, etc.; liquor arseuiialis and cod-liver oil were then given. The joints were treated locally with chloroform and belladonna liniment, and subsequently painted with pigmentum iodi. At times she would be free from pain, and various joints would diminish in size, but the pain would recur, and for a time the elbows and shoulders were very painful. In October the hands were rubbed with eucalyptus and olive oil with some relief. The temperature, as a rule, was normal, with an occasional rise to 99°. As a result of treatment pain was considerably relieved, and the joints

diminished slightly in size. By the end of October the spleen could no longer be felt.

IV. PURPURA HÆMORRHAGICA ; DEATH ; TWO CASES.

1. A. B—, male, æt. 18, labourer. Admitted April 19th, died May 3rd, 1899.

Family history unimportant. He had always been healthy, and there was no history of venereal disease. His symptoms commenced three weeks before admission with an attack of epistaxis lasting for two hours. Two days after this he noticed a number of red spots on his chest and arms. Epistaxis occurred twice more, with a week's interval between each attack ; he became weak and very short of breath ; he also noticed that his hands bled on slight injury, and that the bleeding was very difficult to stop.

When admitted he was well nourished, his skin was anaemic, with a yellowish tint, and his mucous membranes were very pale. A few dusky-red petechiae and some older brownish stains were scattered over the trunk and arms. The area of cardiac dulness was normal, and a systolic murmur could be heard over the entire praecordium, loudest over the pulmonary artery. The lungs and abdominal viscera showed no signs of disease ; the spleen could not be felt. The axillary and inguinal glands of both sides were slightly enlarged, and one or two very small glands could be felt behind the sterno-mastoids. The bones were not tender. The urine contained no albumen. Retinal haemorrhages were present in both eyes. On April 23rd bleeding from the gums occurred, and a petechial eruption developed in the buccal mucous membrane. Two days later there was more bleeding from the mouth, and the gum around the second left bicuspid tooth was observed to be grey, soft, and necrosed. This tooth he had broken four months previously in an attempt to extract it. On April 27th the yellowish tint of the skin was more marked, and was admixed with brown over the lower part of the abdomen and lower part of back and hips. His lips were bluish-white, conjunctivæ clear, gums gangrenous as before, and in addition gangrene had also appeared round the stump of the second left molar tooth. His tongue was moist and covered with brown fur ; breath offensive. The cardiac area extended upwards to the level of the third rib, and a systolic murmur could be heard over the aortic, pulmonary, and apical areæ. A chain of small glands could be felt behind each sterno-mastoid, the largest about half an inch in length ; a similar gland could be felt in each axilla, and one or two above Poupart's ligament on each side. There were no fresh purpuric spots ; but over the tenth rib, in the posterior axillary line, was a tender bluish-red haematoma an inch in diameter. The stools and urine contained no blood. He complained of no pain anywhere, but was very thirsty. Pulse 108.

When admitted he was put on arsenic and iron for five days. Quinine in five-grain doses was then given every six hours for three days ; this, however, had no effect on the temperature, which ranged between 100° and 104°. His mouth was treated first with boroglyceride, and subsequently with corrosive sublimate and glycerine. On April 27th he commenced to vomit, and was put on rectal feeding and bismuth ; the vomit contained altered blood and some large clots. The oozing of blood from the mouth was more or less constant, and the gangrene

did not spread. The hæmatoma increased greatly in size, a bulla formed on it, burst, and discharged blood-stained serum. The boy's condition became steadily worse, the vomiting persisted, and he died on May 3rd.

His blood was examined on April 24th. The red corpuscles amounted to 2,150,879 per c.mm., and a few nucleated red cells were seen. The leucocytes were not increased in number; a differential count showed the following: lymphocytes 67·6 per cent., finely granular oxyphils 20·8 per cent., coarsely granular oxyphils 2·8 per cent., large hyaline cells 5·6 per cent., mast cells ·4 per cent.

Post-mortem.—Roughened bare bone could be felt at the bases of the two gangrenous patches on the gums of the upper and lower jaw of the left side. A slight excess of fluid was present in the left pleura, and the parietal and visceral pleuræ on both sides were dotted with minute subpleural haemorrhages. A small calcareous nodule was present at the apex of the left lung, and a small haemorrhagic infarct at the base. Haemorrhages were also present in both layers of the pericardium, and were extremely numerous in the visceral layer. The valves were competent; the cavities slightly dilated. Haemorrhages were present in the liver and brain, and a mass of adherent clot was stripped off from a large patch at the lower end of the oesophagus. The stomach was full of fluid altered blood, and contained numerous submucous haemorrhages. Subserous and submucous haemorrhages were also scattered throughout the intestinal tract.

2. J. C—, æt. 9 years, male. Admitted September 4th, died September 30th, 1899.

Family history good. Had measles, whooping-cough, and bronchitis in infancy. His symptoms commenced 2 or 3 months before admission with an eruption of purpuric spots, which appeared first at the back of his neck, and then spread over the whole of his body. On August 29th he complained of toothache, and on the following day bled profusely from the gums; his breath was very offensive, and he rapidly lost colour.

On examination there was a copious eruption of purpuric spots, which were most numerous over the chest and lower part of the back; scattered spots were also present on the face and extremities. Some were dark purple, others brownish. They varied in size, the larger being as big as a pea. They were not raised above the surface. Numerous bruises were also present. The lips were swollen, the gums anaemic, and oozing slightly with blood. The submaxillary and cervical axillary and inguinal glands were enlarged. A soft systolic murmur was audible at the apex, and was louder over the pulmonary area. Neither the liver nor the spleen could be felt. The urine contained a slight trace of albumen. Temporary improvement occurred, and the temperature, which for the first few days varied from 100° to 102·6°, steadily improved, and for nearly a week did not rise above 99·2°. It then rose again to about 102° daily, but sank to subnormal for a couple of days before death.

The spots faded, and no new ones appeared; blood oozed persistently from the gums. The pharynx was very congested and filled with blood-stained mucus, and a large ulcer developed on the right tonsil.

He was treated with arsenic, antiseptic applications to the mouth, and oxygen inhalations. Bowels were constipated.

The condition of the blood was as follows:

Date.		Red cells.		Leucocytes.		Hæmoglobin.
Sept. 5th	...	2,170,625	...	5,500	...	—
,, 13th	...	1,444,000	...	12,000	...	30 per cent.
,, 21st	...	1,040,000	...	9,862	...	15 „
,, 26th	...	578,124	...	6,500	...	10 „

On September 21st a differential count showed that 91 per cent. of the leucocytes were lymphocytes, and on September 26th, 81 per cent.

Post-mortem.—A good deal of watery fluid drained from all cut surfaces, although there was very little obvious œdema. Numerous petechiae were present on both external and internal surfaces of the pericardium, scarcely any on the epicardium. The valves were normal, and the ventricular wall showed extreme fatty degeneration. The bronchial, mediastinal, and mesenteric glands were slightly enlarged. The marrow of the heads of the long bones was found to be extremely pale.

V. PERNICIOUS ANÆMIA; LEUCODERMA; ENTERIC FEVER; ARSENICAL BRONZING AND NEURITIS.

A. H.—, female, æt. 22. Admitted June 24th, discharged December 30th, 1899.

Family history unimportant. Previous history good. Married, and had two children, the younger 2 years old.

Symptoms commenced at Easter of 1899 with shortness of breath, and she noticed she was getting pale. She gradually lost strength, and became increasingly paler and shorter of breath. Her legs began to swell 3 weeks before admission. Catamenia regular.

On admission she was a stout woman of extremely anæmic appearance; the conjunctivæ, the palate, and lips being almost bloodless. There was a general increase of the pigment of the thoracic and abdominal parietes, with the exception of a band of leucoderma 2 inches wide running transversely round the waist 2 inches above the umbilicus. Dyspnoea was very marked, and slight pleuritic friction was audible at the bases of the lungs. A loud hæmic murmur, systolic in time, could be heard at the base of the heart. The liver and spleen were not enlarged. Both legs and thighs were extremely œdematosus. Retinal hæmorrhages were present in both fundi. The urine contained a trace of albumen; sp. gr. 1010. There was superficial ulceration of the anterior portion of the tongue. Pulse 120.

Her legs were punctured, and drained well, although the œdema diminished but slowly. Owing to the extreme dyspnoea, oxygen inhalations were used at first hourly. She was also put on red bone marrow, 1 drachm every 6 hours, and on liquor arsenicalis, at first in doses of 3 minims, which was gradually increased, until in September she was taking 12 minims 3 times a day. In July thrombosis occurred in one of the superficial veins of the left side of the abdomen, and the urine, which had for a time been free from albumen, showed a very heavy trace. The legs still remained very œdematosus, though steadily draining. Early in August

spots of dark pigment appeared over face, hands, and arms; she was troubled with coughing attacks, and moist sounds were audible over the bases of the lungs; she was, however, steadily improving in colour. In the 3rd week of September she complained of tingling in her toes; these became very tender, and her knee-jerks were found to be absent; a patch of pigment, moreover, appeared in the mucous membrane of the mouth, and she vomited occasionally. The arsenic, therefore, was discontinued on September 21st. Her skin generally had become much darker in tint since her admission; even after the arsenic was omitted the bronzing became still more marked, the circular band of leucoderma around the trunk standing out against the bronzed skin as a striking contrast. By the end of September the oedema had completely subsided, and she was steadily improving in general health. During September and October she was also taking iron. The peripheral neuritis slowly improved, but the toes remained painful until the middle of November. From November 1st to 21st she suffered from a mild attack of enteric fever, presumably contracted from cases of that disease already in the ward. On November 13th treatment with arsenic was resumed with 5-minim doses, and maintained up to the time of her discharge from the hospital at the end of December, when she had fully regained her strength, and her colour was excellent.

The condition of the blood at different dates is shown in the following table:

Date.	Number of red corpuscles.	Hæmoglobin.	Number of leucocytes.	Remarks.
June 29th ...	796,875 ...	10 per cent. ...	6250 ...	Poikilocytosis with great variation in size of red cells; numerous normoblasts.
July 7th ...	— ...	— ...	— ...	Marked leucocytosis with a few myelocytes; numerous normoblasts.
Aug. 14th ...	2,162,500 ...	Just under ... 20 per cent.	4650 ...	—
Sept. 18th ...	2,584,000 ...	20 , ...	6000 ...	Red cells of varying sizes; few normoblasts.
Oct. 6th ...	3,582,812 ...	70 , ...	5000 ...	Lymphocytes 47·5 per cent.
Dec. 13th ...	4,950,003 ...	80 , ...	6700 ...	Red cells normal; lymphocytes 39 per cent.

VI. LEUCOCYTHÆMIA; TWO CASES.

1. *Spleno-medullary Type; Temporary Recovery.*

H. F.—, female, æt. 39. Admitted April 14th, discharged May 13th, 1899.

Family history: father died of consumption; otherwise good. Her previous health had been good. She was married at the age of 21. She had 6 children, all being difficult labours. Since the birth of her last living child she had 8 miscarriages, the last in January, 1899. For some years she had been subject to

headaches, and complained of gradual loss of strength of 12 months' duration, during which time the headaches became more severe. She had noticed her abdomen was bigger, and for 2 months preceding admission she was troubled with shortness of breath.

On admission she was a pale, thin woman. Thoracic viscera normal, with the exception of a haemis murmur audible with the greatest intensity over the region of the pulmonary valve. The spleen was very greatly enlarged, reaching to the level of the anterior superior iliac spine, and extending for an inch to the right of the middle line. The liver was not enlarged. There were no enlarged glands, and no tenderness of any of the bones. Urine normal.

On examination of the blood on April 19th the condition was as follows:—Red cells, 3,784,370; leucocytes, 174,000 per cubic millimetre. A differential count of the leucocytes showed a percentage of 41·1 of myelocytes. There were also a fair number of nucleated red cells.

On April 20th treatment was commenced by liquor arsenicalis in 3-minim doses 3 times a day. On April 28th the dose was increased to 6 minims, on May 8th to 7½ minims. The blood examination on May 6th yielded the following results:—Red cells, 3,406,250; leucocytes, 156,000 per cubic millimetre; haemoglobin, 40 per cent.

On a differential count the myelocytes had somewhat increased to 46·1 per cent. Normoblasts were present, and many of the red cells showed polychromatophytic degeneration.

The spleen at first increased slightly in size, and then diminished somewhat. During her whole stay in the hospital there was a fairly regular evening rise of temperature to about 99°.

When discharged she was given liquor arsenicalis in 8-minim doses 3 times daily, to take home.

She was readmitted on September 27th, having taken the arsenic during the greater part of the time she had been at home. The spleen had diminished to a striking extent, and did not reach as low as the umbilicus, and had receded to the left of the mid-line.

The condition of the blood was as follows:—Red cells, 4,675,000; white cells, 5500 per cubic millimetres; haemoglobin, 95 per cent. On differential enumeration there were no myelocytes, and the normal proportion of the different varieties of leucocytes had been regained; there was, however, a slight excess of mast cells, and a few normoblasts were seen.

She was given liquor arsenicalis in 5-minim doses 3 times daily to take out.

2. *Splenic Type; Intolerance of Arsenic; Death.*

F. C. W.—, aet. 16, male. Admitted April 11th, died May 28th, 1899.

Family history unimportant. He had measles in infancy. He was not thought delicate, but left two situations, as he found the work too hard. He was treated by a doctor at Christmas, 1898, for a severe cold, and from that time noticed the enlarged glands in his neck. Six weeks before admission he complained of drowsiness, shortness of breath, and general pains, and three weeks later he noticed that his abdomen was swollen. For two weeks he had several attacks of epistaxis.

When examined he was thin and extremely anaemic. The spleen was greatly enlarged, and reached a level just below the umbilicus. The edge of the liver could just be felt. The superficial glands of the neck, axillæ, groins, arms, etc., were all slightly enlarged.

The cardiac dulness commenced at the level of the 2nd intercostal space, and the apex-beat was situated in the 4th space internal to the nipple line. A systolic murmur was audible over the entire precordium. Pulse 120. The sternum and the tibiae were tender on pressure. Abundant retinal haemorrhages were present. The urine was free from albumen. He was put on liquor arsenicalis in 2-minim doses, combined with iron, 3 times daily; this was discontinued after 6 days, owing to severe diarrhoea, and bismuth substituted.

On April 23rd, liquor arsenicalis was resumed in 1-minim doses, but had to be taken off the following day, owing to frequent vomiting, for which he was put on rectal feeding, while iron and bismuth were given by mouth. The vomiting and diarrhoea ceasing, he was given solid food by mouth, and on May 8th liquor arsenicalis was again tried in 1-minim doses. This he took well for a week, but when increased to 2 minims it caused immediate diarrhoea. Arsenic was then given as a pill, with bismuth at the same time, but had to be finally discontinued on May 21st.

Oozing of blood from the gums was almost a permanent feature, with occasional epistaxis. The spleen diminished slightly in size. There was slight irregular pyrexia.

The condition of the blood was as follows :

Date.	Red cells.	Leucocytes.	Hæmoglobin.
April 13th	... 1,153,125	... 27,000	... 20 per cent.
May 8th	... 471,775	... 28,750	Under 10 per cent.
,, 26th	... 366,562	... ?	,, 10 ,,

Differential enumeration of leucocytes :

	April 13th.	May 8th.	May 26th.
Lymphocytes	85	74	84
Finely granular oxyphils . . .	6·5	11·4	11
Coarsely „ „ . . .	2·5	1·2	·33
Myelocytes	5·5	10·8	3·5
Mast cells	·6	1	—

Post-mortem.—The spleen weighed 2 pounds; it was firm in texture, and the Malpighian bodies stood out prominently. The kidneys showed a diffuse infiltration, which obscured their structure. The heart was dilated, and though pale, the ventricular walls were tough. The marrow of the ribs was of an unusually deep red colour. The mesenteric glands were slightly enlarged.

II. DISEASES OF THE CIRCULATORY SYSTEM.

INTRAPERICARDIAL ANEURYSM; RUPTURE; COMMUNICATION BETWEEN THE ANEURYSM AND THE PULMONARY ARTERY.

T. M—, male, æt. 40. Admitted August 14th, died September 19th, 1899.

He had been a healthy man, but at one time had been a stevedore, and had much heavy lifting to do. He contracted syphilis at the age of 29.

His symptoms were of a year's duration, comprising for the greater part of that time occasional attacks of pain and distress over the cardiac region. The pain becoming worse, and his breathing becoming difficult, he consulted a doctor 6 weeks before admission, and then took to his bed. The pain was stabbing in character, and localised to the left side of the chest, not spreading down the arm; the attacks would last about an hour, and were increased by exertion. He coughed occasionally, and his sputum was sometimes streaked with blood. He had lost about 2 stones in weight.

On admission he was a thin man, with sunken eyes. The movement of the left side of the chest was impaired as compared with the right. Cardiac dulness commenced above at the level of the 3rd left costal cartilage, and on the right extended for an inch beyond the right sternal edge. The apex-beat could not be accurately localised, but pulsation could be faintly felt in the 6th intercostal space in the nipple-line.

There was distinct pulsation in the epigastrium. On palpation a well-marked and almost continuous thrill could be felt, most evident in the 3rd and 4th intercostal spaces close to the sternum. At the apex a blowing systolic murmur was audible, which became louder as it was traced towards the sternum, where it became very loud and almost musical, and, moreover, now occupied practically the whole of the diastolic period as well.

A systolic murmur was audible in the left axilla, and at both sides of the spine behind. A double murmur was audible over the aortic area, the diastolic element of which was traceable down the left sternal edge until it became lost in the continuous murmur. No tracheal tugging. The arteries were slightly thickened; the pulse was irregular and of the water-hammer type. Capillary pulsation could be obtained. There were signs of a moderate pleural effusion on the left side. The edge of the liver could be felt 2 inches below the costal margin. The urine was free from albumen.

A skiagram showed a shadow behind the manubrium, extending for a short distance on each side of the sternum. The condition of the lungs remained the same, and tubular breathing was usually audible towards the left base behind. The right pulse was considered on one occasion to be fuller than the left; on another there was a well-marked pulsus trigeminus. He was troubled with coughing and dyspnoea, and slept badly; he improved, however, for a time. He was treated with iodide of potassium and occasional sleeping draughts. Death occurred unexpectedly and rapidly.

Post-mortem.—On opening the pericardium nothing was visible but a mass of soft black clot with fluid blood, weighing 41 ounces. The aortic valve was

atheromatous, and the left ventricle was slightly hypertrophied. The coronary arteries were healthy. The first part of the aorta was the seat of an aneurysm the size of a Tangerine orange, springing from the concavity of the arch, and situated, therefore, behind the origin of the pulmonary artery. Immediately above the pulmonary valves a circular communication, evidently of some standing, and of about the diameter of a pea, existed between the cavity of the aneurysm and the pulmonary artery.

The orifice of rupture of the aneurysm was also situated on the anterior aspect of the sac immediately below the superior reflexion of the pericardium; it was horizontal in direction, and $\frac{1}{2}$ an inch in length.

The sac of the aneurysm contained only soft recent clot. There were no calcareous plates nor atheromatous ulcers in the wall of the aneurysm, and the remainder of the aorta seemed perfectly healthy. The peripheral vessels also showed no gross change. The left pleura contained a pint of fluid, and the right a few ounces. The viscera showed the ordinary signs of passive congestion.

III. DISEASES OF THE DUCTLESS GLANDS.

EXOPHTHALMIC GOITRE; RAPID COURSE; ACUTE ENDOCARDITIS; DEATH.

L. M.—, female, æt. 21. Married. Admitted July 5th, died July 9th, 1899.

Family history good, but her twin brother was said to have had some kind of swelling in his neck. Previous health good, but she had been liable to swellings in the side of her neck, which would appear and disappear. She had, however, been quite free from them for 2 years.

Her friend noticed that her eyes were prominent a few months before admission, but she had not been looking well for a month before that. The patient herself only complained of feeling ill for one week, symptoms commencing with pains in head and back. These becoming worse, she took to bed and sent for a doctor. The pains then affected the extremities, especially the fingers, elbows, shoulders, and knees, while the headache improved. The pains were of a flying character, affecting first one joint and then another.

On admission she was an emaciated woman, with a marked degree of exophthalmos, with dark rings round her eyes, and looking very ill.

The thyroid gland was enlarged, but not to a marked degree; a slight systolic murmur was audible over it.

The cardiac apex-beat was situated in the 5th intercostal space, just internal to the nipple line. At the apex a loud blowing systolic murmur was audible; it was conducted outwards into the axilla. The 2nd sound was inaudible at the apex. The cardiac action was forcible and regular. Pulse-rate 100 per minute.

The knee-joints were tender, and contained a little fluid—more in the right than in the left. The ankles and the plantar fasciæ were also tender. Pupils equal, and reacted normally. Temperature 100·2°.

On the night of July 6th she did not sleep at all; she was very restless, and complained of pains in back and limbs.

Her temperature rose, and reached 105·6° on the morning of July 7th. Repeated spongings brought it down to 102°, but it rapidly rose again. The cardiac action became very rapid and irregular—about 190 per minute. The pulse could not be counted at the wrist. There was marked tremor. She was very restless and excited on the night of July 7th; said she saw "black faces," and thought people were under her bed; complained of great pain in the small of her back, and slept very little.

The bowels were relaxed throughout. The temperature dropped to 102°, and she died in a convulsion.

When admitted she was treated with salicylate of soda, then with belladonna and bromide. Digitalis and strychnine were also given on account of the cardiac condition.

Post-mortem.—The thyroid was generally and moderately enlarged. On section it had a tough gelatinous appearance. Four parathyroids were seen, and did not appear to be much swollen. A large persistent thymus was found spread out over the pericardium. Extensive pleural adhesions were present. The pericardium was healthy and not adherent to the heart, but was adherent to the chest wall at the apex. The left ventricle was slightly dilated, and the mitral valve leaked freely under water pressure. The edges of the valve were thickened and opaque, and lined with a fringe of minute recent granulations. The myocardium appeared healthy.

Microscopically the thyroid showed very little colloid. Many of the vesicles were entirely packed with cubical cells. There was a slight tendency to convolution of the lining membranes of the vesicles, but the cells remained cubical.

IV. DISEASES OF THE DIGESTIVE ORGANS.

I. DUODENAL ULCER; FIVE CASES.

1. *Subphrenic Pneumothorax; probable Perforation of Duodenal Ulcer; Recovery without Operation.*

F. R. D.—, male, æt. 30. Admitted March 6th, discharged April 5th, 1899.

Family and early history unimportant. He had always been liable to what he termed bilious attacks and indigestion. The symptoms were gastric pain, not very acute, which would come on from 2 to 2½ hours after food, relieved occasionally by vomiting. His face was frequently flushed during these attacks.

On March 4th, at 9.30 a.m., he was suddenly seized with severe pain in the lower part of his abdomen. It occurred after lifting a roll of cloth. He took some brandy, which he vomited; he then went to a chemist's, and was given a draught, which he also vomited. He then went to bed. He vomited frequently during the next two days, and took only slop diet.

On admission his tongue was coated with yellowish-white fur. The abdomen moved well on respiration, was somewhat distended and resonant all over. The liver dulness was obliterated. Tenderness existed below and to the left of the umbilicus, and also on deep palpation in the splenic region. The thoracic viscera showed no sign of disease. The urine contained a good trace of albumen. On March 7th his temperature rose to 100·2°; there was very little pain in the abdomen, and that was localised to the lower part. He vomited once a porringer of greenish-coloured and blood-streaked vomit. He was put on milk diet. On March 9th his temperature rose to 102°; no further vomiting occurred, and his stools did not contain any blood nor melæna. The abdomen was still slightly distended and rigid, especially over the upper part of the right rectus muscle, but the pain had disappeared. On March 10th a well-marked bell-sound was heard over the left hypochondriac and adjacent costal zone, and a resonant note obtained over the same area. On the patient rolling over on to his left side both the bell-sound and the resonant note disappeared. On the following day a tympanitic note was observed over the front of the right side of the chest, especially the lower part; breath-sounds were impaired over the lower half of the lung. The note in the axilla was dull, but on turning the patient on to his left side the dulness shifted to the front, and a resonant note was obtained in the right axilla. The liver dulness was still completely obliterated. He developed a slight cough, and complained of flatulence. There was no further vomiting, and his stools remained natural. The trace of albumen disappeared from the urine. On March 14th a band of dulness appeared at the level of the 6th rib in the right nipple line, and extended to the 7th rib; dulness was also present in the upper part of the right flank, but it did not shift with change of position. On the left side shifting dulness could be obtained until March 15th. On March 17th dulness commenced at the level of the 6th rib in the right nipple line, and extended to the costal margin. His temperature was normal from the 14th onwards; the abdomen became flaccid and free from pain, and he was discharged well. He was treated with milk and beef tea until March 13th, when nutrient powder was added; fish on the 21st.

2. Duodenal Ulcers; Perforation, General Peritonitis with Localised Collections of Pus; Double Pleurisy; Operation; Death.

W. H. O—, male, æt. 25, carman. Admitted June 23rd, died June 28th, 1899.

Family and previous history good. He had suffered from indigestion for eighteen months, the symptoms being abdominal pain and vomiting after meals. On one occasion he was said to have vomited about a pint of blood. On the day before his admission to hospital he was seized suddenly with severe pain in the abdomen while at his ordinary work. When admitted he was in an extremely collapsed condition. The abdomen was somewhat distended, and very rigid. No dulness was obtained in the flanks, and the liver dulness was normal.

Friction-sounds were audible in the left axilla. He was infused with 2 pints of saline, and on the following morning his condition was much improved. The left side of his chest posteriorly was found to yield a dull percussion note from just below the spine of the scapula to the base of the lung. Over this area

the breath-sounds were almost inaudible. The left axilla was dull behind the mid-axillary line. In front of this line the note was tympanitic. Normal lung resonance was present in the axilla above the 4th rib. The area of dulness varied with the position of the patient, and when on his right side the dull area became partially resonant. The area of liver dulness internal to the right nipple line was replaced by a resonant note; external to this line the note was absolutely dull. By turning the patient on his left side the area of dulness could be made to travel towards the front. Dulness was present in each flank.

His condition now admitted of operation. On opening the abdomen light brownish-coloured turbid fluid escaped. The perforation was found on the anterior surface of the duodenum, just beyond the pylorus; the aperture was of the size of a crow-quill, and was surrounded by slight induration. Gas and intestinal contents bubbled out through it. A large quantity of turbid brownish sour fluid was present around the spleen. The upper surface of the liver was coated with fibrin, and a small quantity of fluid was there liberated. As the small intestines were covered by the great omentum, which was adherent below to the belly wall, it was not disturbed. The perforation was closed by a double row of sutures; the splenic region and the space above the liver were irrigated with sterile solution. He improved slightly after the operation, but speedily became restless; he vomited once, and his temperature rose on the 3rd day after operation to 100°. Signs of fluid developed in the left pleura, dulness reaching as high as the spine of the scapula. Death occurred on the 4th day after operation.

Post-mortem.—General peritonitis was present. 10 ounces of pus were removed from the pelvis, and a considerable amount was found tracking along the ascending and descending colon. About 6 or 7 ounces were found around the spleen. All the pus was in the main sac of the peritoneum, the lesser sac being free from infection. The highest point of the left wing of the diaphragm was found to correspond to the 3rd intercostal space. The perforation was found to lie in the floor of a chronic ulcer of the duodenum, which had thickened edges. Another chronic ulcer, smaller than the first, lay exactly opposite it on the posterior surface of the duodenum. The floor of this 2nd ulcer was of extreme tenuity, but was strengthened by imperfect adhesion to the pancreas. There was evident inflammation of the peritoneal coating of the spleen as far as this corresponded to the greater sac. The costo-colic fold was not very well marked, and the pus was not therefore well shut in below. The left pleural sac contained 10 ounces of deep yellow serum, and much fibrinous deposit was present. A pleurisy was also present on the right side, but of less degree. The diaphragm was not perforated or even softened on either side.

3. *Duodenal Ulcers; Perforation; Peritonitis; Death.*

T. I—, æt. 33, male. Admitted July 30th, died July 30th, 1899. Illness commenced suddenly on the afternoon of the day before admission with abdominal pain and vomiting.

He was in an extremely collapsed condition, and died very shortly after admission to hospital.

Post-mortem.—Free gas and several pints of turbid yellow fluid were present

in the peritoneal cavity. There was an acute general peritonitis, and the intestinal coils were covered with lymph. The peritonitis was most intense in the region near the duodenum, but there were no localised collections of pus. On lifting up the liver a small perforation, not more than a 6th of an inch in diameter, came into view on the anterior surface of the duodenum, and from this the gastric contents were escaping.

On opening the stomach the perforation was found to be situated immediately beyond the pylorus. The ulcer was evidently of some standing; the mucous membrane around it was thickened, and its walls smooth. At its most superficial and widest part the ulcer was not more than a $\frac{1}{4}$ of an inch in diameter. On the posterior wall of the duodenum, and at the same distance from the pylorus, another ulcer of the same size was present, and had almost extended through to the peritoneal surface. The stomach and remaining viscera were normal. The upper surface of the liver was free from infection.

4. Duodenal Ulcer; Perforation; Subphrenic Abscess, and later General Peritonitis; Death.

E. Y.—, female, wt. 23. Admitted January 26th, died January 27th, 1899. Only an imperfect history could be obtained. She was supposed to have had pleurisy some weeks before admission, the illness lasting some 3 or 4 days. Her bowels were usually constipated. No history of haematemesis or melæna could be obtained. Symptoms commenced 6 days before admission with pains in the stomach, which became worse, then remitted slightly after 4 days, but returned again the next day. There was no vomiting. The pain was felt mainly in the left side of the thorax and abdomen.

When admitted she was in a very collapsed condition, with cold extremities and rapid respiration. The abdomen was distended, and moved badly on respiration. The walls were rigid, and tenderness was general. Liver dulness was not obliterated. Shifting dulness was present in both flanks. Dulness obtained in the left axilla from the 7th rib downwards, and a few crepitations could be heard at both bases. She was too collapsed to permit of operation. Temperature 99.2°. On the next morning a resonant note was obtained over the liver area.

Post-mortem.—The right lung was adherent by a number of easily broken-down adhesions. The left lower lobe was compressed and completely airless. The diaphragm pushed the lung up as high as the 5th rib, as was shown by the anaemic state of the pleura below this point. The lower lobe was slightly adherent to the diaphragm. The abdomen was very much distended, and contained free gas, with much turbid fluid. The largest amount was found in a loculated cavity bounded internally by the suspensory ligament of the liver, and below by the costo-colic fold. This was lined by tough, thick lymph, the left lobe of the liver and the external surface of the spleen having similar coatings. The cavity contained over 40 ounces of thick turbid fluid.

The peritonitis round the small intestine was of much more recent date than that in the subphrenic region, the coils being easily separated by the finger. More than a pint of fluid was found between the coils.

The stomach appeared to be perfectly healthy. On the anterior surface of the

duodenum, three quarters of an inch from the pylorus, a perforation was found at the base of a circular ulcer of the typical form. Shreds of peritoneum could be seen across the aperture. The ulcer was solitary. Dense adhesions were present around the duodenum, and it was impossible to trace the course which had been taken by the duodenal contents from the perforation on the right side of the spine to the splenic region, nor was any connection discovered between this encysted collection and the general peritoneal cavity, although one had almost certainly been formed before death.

The liver was evidently fatty. The surface of the right lobe was smooth and normal; the left lobe was very anaemic from compression. The spleen was also small and pale from compression. The lymphatic glands behind the peritoneum in the neighbourhood of the duodenum were enlarged and soft.

5. *Duodenal Ulcer; Perforation; Peritonitis; Operation and Death.*

W. W.—, male, æt. 15. Admitted September 21st, died September 23rd, 1899. No history was obtained in this case other than that he was suddenly seized with severe abdominal pain 7 hours before admission to hospital, and vomited twice.

When admitted, his abdomen was found to be almost motionless on respiration, tender and rigid, especially on the right side. Hepatic dulness was obliterated in the right nipple line. Dulness was obtained in the right flank, but it did not shift with change of position of the patient. Temperature 99°. Pulse 88.

Operation was performed 2½ hours after admission. Free gas and fluid were found to be present in the peritoneal cavity, and a perforation on the anterior surface of the duodenum was discovered and sutured. The peritoneum was washed with water. The operation lasted 20 minutes. He experienced severe pain after the operation, necessitating the administration of morphia.

Post-mortem.—Some recent lymph was present over the liver, stomach, and spleen. The stomach and duodenum were distended. The mucous membrane of the stomach was swollen, white, and covered with tenacious mucus. The organ contained a large quantity of potato and potato peel, but no meat. This must have been the last meal before the onset of symptoms. A small ulcer was present on the anterior surface of the duodenum, just beyond the pylorus. Its edges were sharp; it was about half an inch long, and not quite so wide. The suturing was quite sound. The rest of the intestine and the other viscera were quite healthy.

II. INTESTINAL OBSTRUCTION; POLYPOID GROWTH IN SIGMOID FLEXURE; OPERATION; RECOVERY.

C. F. C.—, male, æt. 56. Admitted October 26th, discharged November 22nd, 1899. He stated that he had a similar attack 25 years ago, which yielded rapidly to medicine.

There was a history of syphilis, and he had been somewhat alcoholic; otherwise a healthy man.

His illness commenced on October 20th with griping pains in the lower part of his abdomen. The bowels, which had hitherto acted regularly, became constipated, and on each of the following two days he took a dose of castor oil, but without effect. On October 23rd he noticed for the first time that he was passing blood *per rectum*. The pain was at times paroxysmal, and caused a desire to evacuate the bowels; but only a little blood was passed. He did not vomit.

On admission he was a well-nourished man. His tongue was covered with a white fur. The abdomen was not distended. On palpation there was some slight tenderness in the left iliac fossa, and here increased resistance could be made out, but no mass could be felt. The pain, which was colicky in character, was most acute in this region.

His chest was very emphysematous, otherwise normal. Pulse 80. Urine normal.

A simple enema was given on the day of admission and on the following day, the result in both cases being only a little mucus and bright red blood. The attacks of pain persisted, but his general condition remained good, and there was no vomiting.

On October 28th he was given an ounce of castor oil, and again on the next day. No faecal matter was evacuated, but merely blood and mucus. The pain increasing in severity, the abdomen was opened on October 31st by an incision in the left iliac region. A mass could be felt in the sigmoid flexure, which was incised. A growth of about the size of a Tangerine orange was found occluding the lumen of the gut, and connected to it by a pedicle half an inch in length. The surface of the growth was smooth, allowing the bowel wall to glide easily over it. The pedicle was ligatured and the growth removed. Microscopical examination proved it to be a lipoma. The subsequent course was uneventful; the bowels were opened by enema on November 2nd, and by castor oil on the 4th, after which they acted normally. A slight attack of gout occurred on November 15th. He was discharged cured.

III. APPENDICITIS WITH LOCAL ABSCESS, FOLLOWED BY INTESTINAL OBSTRUCTION ; OPERATIONS ; RECOVERY.

W. T. H—, male, at 8 years. Admitted June 30th, discharged August 25th, 1899. There was no history of any previous attack of appendicitis.

Illness commenced on June 25th. He ate an ice cream, and a quarter of an hour afterwards was seized with abdominal pain and vomiting. He went to bed, and the pain increased in severity. There was no action of the bowels until June 28th. No improvement took place; the pain grew worse, and on June 29th his abdomen was noticed to be distended. Vomiting of greenish-coloured fluid was frequent throughout.

On admission, the abdomen was found to be distended, and coils of intestine were plainly visible. The abdominal respiratory movements were much impaired. Tenderness was general, and was most acute in the right iliac fossa. The abdominal wall was very rigid. Some dulness was present in both flanks, but it did not shift with movement of the patient. The liver dulness was not obliterated.

The thoracic viscera were normal; the tongue was covered with thick whitish-

brown fur down the side, but was dry at the tip and in the middle. Temperature subnormal. He vomited once on the day of admission. The abdomen was opened on July 1st by an incision parallel to, and 1 inch above, Poupart's ligament. A large quantity of very offensive pus was evacuated from a local abscess in the right iliac fossa; the vermiform appendix was not seen. A drainage-tube was used.

The subsequent course of the wound was satisfactory. For a time there was a free discharge of faecal-smelling pus; this gradually diminished, and the drainage-tube was dispensed with on August 15th. Some consolidation at the apex of the left lung, with crepitations, tubular breathing and cough developed, but with very slight constitutional disturbance. The bowels acted regularly until July 27th, when diarrhoea set in and lasted for 5 days. Vomiting commenced on July 30th, and was repeated several times during the next 2 days. There was no rise of temperature.

On August 2nd his abdomen was slightly distended; several coils of intestine became apparent, with visible peristaltic movement. There was no tenderness except at one spot below the left costal margin. The bowels, which had not acted on August 1st, were relieved by enema on the morning of August 2nd, and on this day the abdomen was again explored.

An incision was made below the umbilicus and to the right of the mid-line. Fibrous bands were found running in all directions, and under 2 of these coils of small intestine were strangulated; another coil was strangulated through an aperture formed by a long Meckel's diverticulum, which had formed adhesions to the mesentery. The bands were divided and the diverticulum removed. The appendix, which was very long and adherent, was also removed.

On the following day his temperature rose to 100°; he vomited several times, and suffered considerably from pain in the abdomen. From this time onwards he rapidly improved. The bowels were relieved by enemata on August 3rd and 5th; subsequently by castor oil.

V. DISEASES OF THE LIVER.

CIRRHOSIS OF LIVER IN A CHILD; ACUTE PERITONITIS; DEATH.

M. F—, æt. 4½ years, female. Admitted May 3rd, died May 4th, 1899. The child had always been rather delicate, but her only illness had been measles at the age of 2 years. Three days before admission she complained of abdominal pain, and vomited several times; she rapidly became worse, and when admitted was almost moribund. The abdomen was distended; shifting dulness was present in the flanks, and a fluid thrill could be obtained. Dilated veins were visible on the surface. Temp. 102·8°

Post-mortem.—General purulent peritonitis was present with small turbid effusion; the intestinal coils were all adherent, and coated with thick lymph.

Careful search failed to reveal any local cause for the peritonitis. Recent fibrinous pleurisy existed on both sides. The liver was large, and very firm in texture; it was permeated by fibrous bands, traversing it in various directions, and lying in the portal canals. The spleen was large and firm. The cortex of the kidneys was increased in thickness, hyperæmic, and mottled.

Microscopically the liver showed a portal multilobular cirrhosis of moderate degree. The individual lobules were not invaded.

VI. DISEASES OF THE GENITO-URINARY ORGANS.

CHRONIC INTERSTITIAL NEPHRITIS OF CHILDHOOD; TWO FATAL CASES.

1. S. M.—, male, æt. 11 years. Admitted March 21st, died March 30th, 1899.

Family history good. The boy had been previously treated for Bright's disease, and his only other illnesses had been measles and whooping-cough. He had felt unwell for 5 weeks with occasional vomiting, cough, and pain in his side. The vomiting became worse; he slept badly, and lost flesh considerably. Diarrhoea commenced the day before admission to hospital. When examined he was thin, and looked very ill. The cardiac apex was situated in the 6th intercostal space in the nipple line; no murmurs were detected. Pulse-rate 70 per minute. Crepitations were audible over the whole of the right lung and at the left apex, and rhonchi were present in both lungs. The edge of the liver could not be felt, but there was great tenderness below the right costal margin. There was no œdema of legs. Urine : sp. gr. 1006; albumen, “ $\frac{1}{4}$ ” on boiling; no casts found. Tongue coated with white fur, except for a central red strip. Temp. 98° F. He slept very badly, and complained of pain in chest and abdomen. On March 27th he developed a papular, reddish-brown eruption on the trunk, and to a lesser extent on the extremities. The diarrhoea persisted, and on one occasion the stool contained about half an ounce of blood. He passed from 20 to 40 ounces of urine daily, containing albumen but no casts. The quantity diminished towards the end. He was irritable, and increasingly drowsy.

Post-mortem.—The peritoneal cavity contained about 6 ounces of ascitic fluid. Both kidneys were extremely small; the right weighed $\frac{3}{4}$ of an ounce, and was represented by a small body about $1\frac{1}{2}$ inches long. The capsule was thickened, and when stripped off left a granular surface behind. The pelvis was found not to be greatly diminished in size, and no renal structure could be detected in the tough red layer around. The left kidney was small, lobulated, and weighed $2\frac{1}{4}$ ounces. The surface was very granular after stripping off the capsule, and the granules had a translucent appearance. The cortex and medulla were both diminished. No cysts were present. In consistence the organ was not very tough. The liver was firm and enlarged. The left ventricle was markedly hypertrophied, and the root of the aorta showed early atheroma. The lungs were bronchitic.

2. J. S.—, male, *æt.* 4 years. Admitted September 12th, died October 13th, 1899.

Parents healthy. The boy's only previous illness was measles at the age of 2 years. On September 1st he had a fit which lasted one hour; this was the only one that occurred. He lost his appetite, became drowsy, developed a cough, and complained of headache. His arms and legs had been noticed by his mother to be swollen for 3 days. When admitted, however, his face only was œdematosus. He was very anæmic. The cardiac apex-beat was situated in the 5th intercostal space, $\frac{1}{2}$ inch external to the nipple line; the cardiac action was irregular and intermittent. No murmurs were detected, but the aortic second sound was accentuated, and the pulse-tension high; rate, 100 per minute. Crepitations were audible at the bases of both lungs. The edge of the liver could be felt two inches below the costal margin. There was no evidence of fluid in the abdomen. There was a very scanty secretion of high-coloured urine, containing albumen “ $\frac{1}{2}$ ” on boiling, and a few granular casts. Careful examination revealed no signs of desquamation.

The legs and scrotum rapidly became œdematosus, but the skin of the scrotum giving way, the fluid drained freely. Towards the end of September the amount of albumen diminished, and in October the urine was usually quite free from it; the amount of urine was very small, but difficult to estimate owing to incontinence. The œdema also diminished greatly, and for a time disappeared completely from the legs. Dyspnœa was a more or less constant feature, and at times very distressing; there was an occasional slight elevation of temperature, and during the first two weeks diarrhoea was present. On September 30th an ulcer appeared on the right tonsil, and a culture was free from diphtheria bacilli. A week later convergent strabismus developed, and the boy became increasingly lethargic.

Post-mortem.—The whole body was very anæmic, and there was general œdema; the peritoneal sac contained some clear fluid, but the pleural sacs were dry. The kidneys together weighed $3\frac{3}{4}$ ounces, and were red and very tough; the capsules were partly adherent, and the surface of the kidneys smooth. The cortex was distinctly diminished, and there was an excessive deposit of fat round the pelvis of the kidney. No cysts were present. The left ventricle showed marked hypertrophy, and the liver was passively congested.

VII. DISEASES OF THE NERVOUS SYSTEM.

1. CEREBRO-SPINAL MENINGITIS; SECONDARY HYDROCEPHALUS; DEATH.

W. S.—, male, *æt.* 30. Admitted October 11th, died November 14th, 1899. He suffered from yellow fever in South America at the age of 21, and from malaria 2 years later. No history of syphilis. His symptoms were of 5 weeks' duration, and commenced with severe headache, which lasted off and on during

the whole time. Four days before admission the headache became more severe and continuous, and two days later he was troubled with pain in the lumbar region. At times this pain would spread to the legs, so that he could scarcely walk. He also complained of red, tender, and itching swellings, which would rapidly come and go on his limbs. The headache was chiefly frontal.

On admission he was a well-nourished man. His tongue was covered with a thick white fur. The pain in the back was most acute over the last lumbar vertebra, which was slightly tender. He complained of some abdominal pain, and the belly walls were rather rigid. Muscular power, sensation, and reflexes were normal. Special senses normal. There was some difficulty in micturition, but the urine was normal. The heart and lungs showed no evidence of disease. Temp. 101°. Within a few days of his admission, ankle and patellar clonus developed, with dorsal flexion of the big toes on stimulating the sole. He complained of stiffness in his neck and face, but at that time no retraction was present. His headache was at times very severe, and he slept very badly. From October 18th onward he became very restless, constantly trying to get out of bed, and at times talking incessantly. A divergent squint was observed occasionally. No paralysis of limbs occurred. Ankle-clonus persisted, and was usually best marked on the right side. Towards the end of October his abdomen became greatly retracted, with rigid walls; nystagmus was frequently observed, and twitching of the right side of the face occasionally. The pain in the head and at the back of the neck was at times very severe, and slight retraction of the head developed. Attacks of hiccough occurred occasionally. He passed all evacuations into the bed. In November he gradually became more and more comatose; feeding had to be done by the nasal tube, and he wasted greatly. A large sacral bedsore developed. On the morning of his death there was marked rigidity of neck and arms. Temperature occasionally rose to 100°, but became somewhat higher towards the end, and reached 104° shortly before death. At no time was there any optic neuritis.

Post-mortem.—The brain was very bulky, and the convolutions somewhat flattened, this being due to distension of the ventricles, from which clear fluid poured in abundance on section. Both lateral ventricles were dilated. The vessels at the base of the brain were free from disease. The membranes over the floor of the 3rd ventricle were opaque and thickened, and a considerable patch of meningitis was present in front of the optic chiasma. Another patch of lymph was present on the upper aspect of the cerebellum at its anterior extremity. The right Sylvian fissure contained a small group of doubtful tubercles, and the neighbouring convolutions were considerably softened. A patch of lymph was present over the lumbar cord. The viscera were normal, and showed no signs of tuberculosis. Examination of the lymph in the clinical laboratory gave no result as to the organism causing the meningitis.

2. TUMOUR OF PONS.

C. S., male, *æt.* 7 years. Admitted October 4th, discharged October 15th, 1899.

Family history unimportant. Previous history good, with the exception of a temporary discharge from one ear at the age of 2; measles at the age of 3.

His illness commenced on September 14th, when he fell backwards off a gate, striking the ground with the back of his head, and causing a big bruise; he stopped playing for a time, but later on in the day he was climbing on to a girl's back, and again fell in a similar way. Nothing was noticed further until 3 or 4 days later, when he became unsteady in walking, and even fell. His eyelids were noticed to have dropped, and his speech altered, becoming nasal and slow. It was stated that he snored, that he slobbered, and that there was running from his eyes. For a day or two he vomited slightly after his meals. It was also noticed that he masticated his food improperly, and on several occasions nearly choked from this cause; he seemed also to swallow very slowly. There were no convulsions. His temper changed for the worse, and he used language which his parents were surprised at his knowing. He complained of headache. His bowels were constipated, and he had lost weight.

On admission he was well nourished. There was almost complete paralysis of the right side of the face. The tongue was protruded slightly to the left. Voice nasal in quality; swallowing of fluids performed slowly and with difficulty, with occasional slight regurgitation through the nose; solids were swallowed in a normal manner. Trapezius and sterno-mastoid muscles acted normally. He talked slowly and indistinctly, but could be understood. There was partial ptosis in each eye; the eyes could be fully opened, but soon drooped. The left eye could be closed firmly, but not the right. The ocular movements were greatly restricted; downward movement was alone performed well. The right external rectus was completely paralysed, and the left external rectus weak. Both internal recti were also weakened. The eyes could be rotated upwards, but only for a moment. Irregular movements of eyes accompanied attempts to follow an object. Vision was good, and the fundi normal. Hearing, smell, and taste unaffected. Pupils were equal, and reacted normally to light and accommodation. The conjunctival reflex was absent on the right side, and sluggish on the left. Cutaneous sensation normal. As regards the muscular power of his limbs, there was no paralysis, but he was quite unable to stand unaided, and when attempting to walk dragged his limbs along one behind the other. In bed, however, the muscular power of his legs was better than would have been suspected from his gait. Power in upper extremities was fair, but muscular sense impaired, there being some difficulty in carrying out simple movements, such as picking up an object, etc.

The knee-jerks were exaggerated; plantar reflexes brisk, with dorsal response of big toes. No patellar or ankle clonus. Sphincters unaffected. Thoracic viscera healthy.

The movements of the right side of the face improved, and the ptosis disappeared. Conjugate movement of the eyes to the right was throughout practically lost, and to the left impaired. Saliva dribbled from his mouth, and the difficulty in swallowing became more marked. Incontinence of urine developed. He became more lethargic, and his speech more indistinct. The tongue was protruded with difficulty, and showed coarse tremors; it usually deviated slightly to the right on protrusion. His muscular power diminished, and he was unable to sit up in bed without support. The spinal accessory nerve was not paralysed.

When discharged there was still no optic neuritis; his pupils were small and

active; conjugate movement to the right was impossible, and to the left poor. Nystagmus accompanied attempted movement of the eyes.

There was no affection of the 5th nerve. Babinski's sign was present in both feet. The right knee-jerk was brisker than the left, the latter being almost absent. Saliva still dribbled from his mouth, and his speech was very indistinct. The muscles of the neck were very weak, his head falling backwards or forwards. There was no vomiting and no headache while in the hospital.

After leaving the hospital the difficulty of swallowing increased, and he wasted rapidly. The left arm and leg gradually lost power. Vomiting occurred occasionally. Ulcers developed on the right cornea. Post-mortem the body was extremely emaciated. The right lung was nearly solid from confluent bronchopneumonia. On examining the brain the pons was found to be asymmetrical from the presence of a tumour involving the right side more than the left, and also extending into the right half of the medulla.

3. MULTIPLE CEREBRAL ABSCESES; DEATH.

H. S.—, male, horsekeeper, æt. 37. Admitted December 8th, died December 10th, 1899.

Family history unimportant. He had measles in infancy, and since then his eyes had been weak, and liable to inflammation. At the age of 21 he suffered from some skin disease of the face. No history of syphilis. No history of ear trouble.

Two months before admission he was struck over the right eye by a horse's head; he was knocked down, but did not lose consciousness. His eye was blackened, and his face very much swollen. He did not leave work, nor see a doctor, but his wife thought he was never quite well after the accident. A month after the accident he suffered from acute pain under the right arm, which was treated by a doctor as rheumatism, and on account of which he was away from his work for two weeks. Three weeks before admission he began to vomit after his meals, and a week later he complained of drowsiness. This increased, and pain in his right temple developed, which interfered greatly with his sleep. He continued at his work up to within six days of his admission to hospital. Two days after leaving his work he had a rigor, and two days after this his left hand became powerless. Vomiting became more frequent and the headache was worse. He experienced difficulty in speaking, and saliva dribbled from his mouth when eating.

On admission there was decided weakness of the muscles of the left side of the face, but the occipito-frontalis acted fairly well. The tongue was protruded to the left. There was marked weakness of the left arm, and to a less extent of the left leg. The left external rectus muscle contracted feebly, and the associated conjugate action of the right internal rectus was impaired. The pupils were very small, and reacted sluggishly and slightly to light. Owing to corneal opacities it was impossible accurately to observe the condition of the fundi. Visual fields not contracted. Purulent conjunctivitis was present in both eyes. Hearing was normal; there was no discharge from the ears, and the membrana tympani was healthy on both sides. Taste and smell were unaffected.

There was no impairment of sensation anywhere. The left knee-jerk was brisker than the right.

The thoracic and abdominal viscera showed no sign of disease. His tongue was slightly furred, temperature normal, pulse 44 per minute, regular, full, and strong. Urine normal. 2 days after admission he rapidly became comatose, respiratory efforts became infrequent, and he died without any convulsions, respiration failing before the heart.

Post-mortem.—No signs of external injury were present; the skull-cap and dura mater were normal. The sinuses contained fluid blood. No meningitis was present, and the vessels at the base were free from disease.

Four distinct cerebral abscesses were present, 3 in the right, and 1 in the left cerebral hemisphere, all recent, with thin walls, and containing greenish inoffensive pus. None of them communicated with the ventricles. They all appeared to be of the same age, and were situated

(1) One containing about 2 ounces of pus on the under and anterior part of the right temporo-sphenoidal lobe.

(2) One containing 2 drachms of pus in the lower third of the ascending frontal and parietal convolutions of the right side.

(3) One in the right angular gyrus rather smaller than the preceding.

(4) One subcortical in the left quadrilateral gyrus.

The ears and orbits were quite normal. In the upper lobe of the right lung was a small smooth-walled cavity, the size of a pea.

4. THROMBOSIS OF BASILAR ARTERY.

W. M.—, male, aet. 33. Admitted November 28th, 1898; discharged March 4th, 1899.

Family history good; no history of any affections of the nervous system. Patient was a temperate hard-working man; there was no evidence of venereal disease, but he admitted exposure.

On the morning before his admission to hospital he suddenly cried out after breakfast that he was going mad; he did not lose consciousness, but was found to have lost the use of his right arm, and his speech became blurred and indistinct.

On examination he could understand everything that was said to him, and could name objects correctly, but articulation was very indistinct. Right hemiplegia was present, the arm being completely helpless, and the leg nearly so. The tongue participated in the hemiplegia, deviating to the right on protrusion. Sensation was unaffected. There was slight rigidity on the right side; the right knee-jerk was brisker than the left, and ankle-clonus was present on the right side.

As regards the cranial nerves, the facial nerve on the left side was completely paralysed, both the upper and lower parts of the face being equally affected. The left sixth nerve was involved, the external rectus muscle being paralysed. The other ocular muscles of that side were normal with the exception of some weakness of the internal rectus. Of the right ocular muscles the internal rectus showed marked weakness on attempts at conjugate movement to the left, but acted on convergence. Movement outwards was also weakened. The right pupil was larger than the left; both reacted well to light and on convergence, and the consensual reflex was normal. The right eye was the seat

of coarse nystagmoid jerkings. Conjugate deviation of the eyes to the right was present. Hearing was deficient on the left side, the watch being heard at 8 inches from the left, and at 18 inches from the right ear. The motor branch of the left 5th nerve was affected, the lower jaw being deflected to the left when the mouth was opened; the sensory division of the nerve was unaffected. He experienced considerable difficulty in swallowing. Smell and taste normal. No optic neuritis. His tongue was covered with a thick white fur; sordes were present on the lips, and his breath was most offensive. The thoracic viscera were normal with the exception of the presence of a faint systolic murmur over the aortic area. Pulse 76; arteries not thickened. Urine contained no albumen.

His condition improved to a certain extent; he complained constantly of singing in his left ear, and occasionally in both; the power of hearing remained permanently diminished in the left ear, so that, as a rule, he was unable to hear a watch unless it was held almost in contact with the ear. The difficulty of swallowing improved but slowly, and on December 1st he had to be fed for one day with the nasal tube. Power returned to a moderate extent in the right arm and leg, the movements at the shoulder and elbow being the first to reappear. Practically no change occurred in his ocular movements; there was permanent conjugate deviation to the right. The left external rectus regained no power, but the right internal rectus, which at first could not move independently, slowly gained a small scope of action. Attempts to look to the left always caused coarse nystagmoid movements in the right eye. The visual fields were examined on December 13th, and found to be contracted in the temporal half of each, and with slight general contraction, especially in the left. On January 12th he had an attack of dizziness and swimming in the head, with loud singing noises in his left ear; this lasted two hours, and left him very deaf; there was no loss of consciousness. He stated that it exactly resembled his original attack. No new symptoms, however, followed, and his general condition remained the same. On first getting up he was unable to stand without assistance, and for some time his gait was very unsteady. The facial paralysis improved, but did not entirely disappear. The external pterygoid muscle also regained some power, and the tongue did not deviate so much to the right on protrusion. There was therefore a moderate improvement in the hemiplegia, and in the facial and pterygoid muscles, but the ocular condition showed practically no change. His speech also became less indistinct. During his first fortnight in the hospital his temperature reached 99° or 100° each day, but became normal from then onwards.

The treatment adopted was the administration of iodide of potassium and mercury.

5. HYSTERIA; PTOSIS, HEMIANÆSTHESIA, CONTRACTURES, ETC.; RECOVERY.

B. A—, female, æt. 16. Admitted August 22nd, 1898; discharged January 8th, 1899.

Family history good. In childhood she had measles, mumps, and whooping-cough; influenza in 1897. On one occasion she walked in her sleep, six years

before admission. At the age of 10 she suffered from nocturnal incontinence for a short time. She was subject to nightmares. Catamenia commenced at the age of 14, and were regular, but with some dysmenorrhœa. Bowels always regular.

Illness commenced 8 months before admission with difficulty in opening the right eye; this gradually became worse, and when she came under observation it had been quite shut for 7 weeks. For 3 months the left eyelid had also drooped slightly. She complained also of headache, which had troubled her off and on for a couple of years, and of pains in the right leg.

When examined she was a dark-skinned stolid-looking girl. The right eye was almost shut, and the upper lid could not be raised voluntarily; the left eyelid drooped slightly, but she possessed fair control over it. The ocular movements were good, the pupils equal and active, and there was no nystagmus and no optic neuritis. The thoracic and abdominal viscera showed no evidence of disease. Urine normal.

She was isolated in a small ward, but put on full diet. The interrupted current was employed daily with little or no result. On September 1st she was transferred to the large ward, where she was given light work to do, and made herself very useful. On September 8th a blister was applied behind the right ear, and on the following day a seton was inserted in the same position. At the same time the left eye was bandaged up. Considerable improvement occurred, and by the end of September she could open the right eye for quite half an inch. On October 3rd she was found to have developed complete loss of power in the right arm and hand, with, however, no loss of sensation. A fortnight later there was complete right-sided hemianæsthesia, and ankle-clonus could be elicited on the right side. On October 20th the whole of the tongue was found to be anaesthetic; there was loss of taste, and she complained of headache. By the end of November power began to return slightly in the right arm and leg, but the anaesthesia persisted until December 5th, when the right side of the neck was found to be æsthetic; the power of the right hand improved, but her wrist was very stiff. The eye also showed steady improvement, and by the middle of the month the movement of the upper lid was quite restored; the vision of the right eye, which for a time had been very deficient, also improved, sensation returned in the tongue, and taste was restored. The right ankle was extended and extremely stiff, and the foot turned inwards. When she was discharged, on January 8th, hemianæsthesia still persisted, with the exception of the dorsum of the foot; the right leg was very weak, and the ankle rigid.

Readmitted April 25th; discharged May 31st, 1899.

After her discharge she had been to a convalescent home. She contracted influenza, and this was followed by increased loss of power in the right leg.

When examined, the muscles of the right leg below the knee were found to be contracted, and the foot turned inwards. She was able to walk, but did so on the outer side of her right foot, with the toes pointing directly inwards. The spasm could be overcome by force, and the foot placed in the normal position, but dorsiflexion was limited to a right ankle, and was accompanied by ankle-clonus. Both knee-jerks were exaggerated, and the plantar reflexes were present with flexion of the toes. Below the knee there was complete anaesthesia to all forms of stimulus, with the exception of the sole of the foot, where sensation was normal. Fair power obtained in the right arm, and sensation was normal. There

was no ptosis; all the ocular movements were carried out normally, and there was no nystagmus nor optic neuritis.

On April 28th the right arm was found to be completely anaesthetic, and three days later the right side of the face with the entire tongue were similarly affected. Sensation was retained on the trunk and thigh. She was treated with the battery and the electric bath. On May 17th she complained of neuralgic pain in both eyes; vision was dim in the right eye, nystagmus was present in both, and there was partial ptosis in both. All these symptoms, however, cleared up in a couple of days, otherwise there was little or no improvement on her discharge on May 31st.

Readmitted October 19th, discharged December 11th, 1899.

She stated that whilst at home she had again had two slight returns of influenza.

On examination, the foot was still in a position of equino-varus. The right arm was held slightly flexed at elbow, wrist, and fingers, and efforts to straighten were resisted. All the movements of the right upper and lower extremities were weak as compared with the left side.

There was complete anaesthesia to all forms of stimuli in the right side of the head and face, the right upper extremity, the skin on the right side of neck and shoulders joining the arm and head, of the leg from about 4 inches above the knee to the foot, excluding, however, the sole. Both knee-jerks were much exaggerated, and ankle-clonus was present on the right side only. Plantar reflexes were present, with flexion of the big toe. Ocular muscles normal. Power of smell and taste diminished on right side. The battery was applied daily, and a cold shower-bath every morning; massage of the right arm and leg was employed for a quarter of an hour twice daily.

Improvement began at once and continued. Sensation returned on October 31st to the scalp; on November 6th to the forehead and palm of the hand; on November 7th to the dorsum of the hand and foot; on November 9th to the ear; on November 11th to the face, shoulder, and upper arm; on November 16th to the upper part of the forearm and the knees; on the 20th to the remainder of the forearm; and finally all remaining anaesthesia disappeared after a strong application of the battery on November 29th. The foot had meanwhile steadily improved, and by the end of November, with the aid of daily gymnastics in the physical exercise department, she could walk and run well and hop on either leg. She was quite cured when discharged on December 11th.

6. HÆMORRHAGE INTO SPINAL CORD; DEATH.

E. P—, male, æt. 58. Gasfitter. Admitted March 29th, died April 1st, 1899.

His father had died from the effects of chronic alcoholism, otherwise family history unimportant. The patient had been a healthy, temperate, and hard-working man. He contracted syphilis at age of about 40, and had also had gonorrhœa. He had been troubled with a winter cough for many years. Before his illness commenced his work had been rather harder than usual, but there was no history of trauma. Five weeks before admission his cough became more troublesome: he lost his appetite, and felt generally out of sorts. Two weeks

later, while at work, he noticed a feeling of numbness and cold in his right leg. This was followed by pain in the right knee, which slowly spread up his thigh, across his back, and down the left thigh to the knee, this taking about a week. The pain was sharp. He also complained of a feeling as if a piece of rope were tied round the knee. During this time he had remained at home, and was able to walk with assistance, though unable to feel the ground properly. His legs felt as if his knees were giving way. The pains and numbness increased. There were no girdle-pains in the trunk.

On March 20th, on waking up, he found he was unable to move his legs. From that time constipation and retention of urine obtained. The passage of the catheter was attended with some bleeding. He complained also of hypogastric pain, which was accentuated by the taking of food. He lost weight considerably.

On admission his legs were found to be the seat of complete flaccid paralysis, with absence of knee-jerks. They were not wasted out of proportion to other parts. Tactile sensation was normal in both. Sensations of pain were normal except on the outer aspect of the right leg, where they were somewhat deficient and delayed. Cold was recognised as such, except on the inner side of the right foot, where he compared the sensation to that of a scratch or prick. Sensation of heat was impaired, a hot test-tube being perceived as an ordinary tactile sensation.

The plantar reflexes were present, with dorsal flexion of the big toes. The abdominal, epigastric, and thoracic reflexes were absent. The power of the arms was fair, and there was no affection of sensation. Marked local contractions were produced on tapping the muscles, and this irritability was present over the entire body; occasional spontaneous twitches occurred. Dupuytren's contraction was present in both hands. The chest was emphysematous, and respiratory movements poor. The diaphragm acted normally. The abdomen was considerably distended. There was retention of urine, and no sensation when the bladder was distended. The urine was deeply blood-stained. Tongue slightly furred, but moist. He slept badly on the night of admission, and on the following day his abdomen was rather more distended. The pains were not severe. Babinski's sign well marked.

On March 30th he was worse, and the abdomen still greatly distended. He vomited frequently shortly after taking two aperient pills, but was much relieved by the passage of a copious evacuation after an oil enema.

On April 1st he complained of great pain in his back; his breathing rapidly became very difficult, and he died somewhat suddenly.

Post-mortem.—The brain and its membranes presented no evidence of disease; the spinal canal and membranes of the cord were normal. On opening the membranes a dark fusiform discolouration, an inch in length and a quarter of an inch in breadth at its widest part, was seen shining through the posterior part between the 5th and 6th dorsal nerves at their point of exit. On section the posterior half of the cord showed yellow softening immediately below the first cervical nerve. After hardening it was found that haemorrhage was visible in the right posterior column as a small speck between the points of exit of the 4th and 5th cervical nerve-roots. In the lower cervical region the haemorrhage was much larger; it was still limited to the posterior columns, but involved the

left slightly as well as the right. In the mid-dorsal region it involved the central grey matter widely, and on the right side it encroached on the anterior horn, all the posterior horn except its tip, the posterior columns except for one small patch internal to the tip of the posterior horn, and another small patch at the posterior extremity of the posterior fissure. The anterior third of the left posterior columns was also involved.

No hæmorrhage was visible in the lumbar segments. The lungs were emphysematous; the heart was normal, and there was no arterial disease. Numerous peritoneal adhesions were present. The kidneys were in an early granular condition. The bladder was distended with blood-clot, and in a condition of most acute cystitis.

VIII. POISONING.

HYDROCHLORIC ACID POISONING; DEATH.

E. C.—, female, æt. 61. Admitted April 18th, died April 18th, 1899.

The woman was brought to the hospital at 10.30 a.m., having drunk about three ounces of spirits of salt twenty minutes previously.

She complained of severe pain in the stomach. Externally there were no marks of acid about the mouth, but the epithelium covering the palate had been thrown off in a continuous sheet. Her pulse was small, and she was very collapsed. She vomited a little blood, and passed about 3 ounces of urine, which contained blood, and also epithelial and blood-casts. Death occurred at 5.50 p.m.

Post-mortem (20 hours after death).—Rigor mortis was well marked.

The anterior parts of the mouth and tongue showed no changes. The posterior parts of the tongue, the fauces, and both aspects of the epiglottis were covered with a thin wrinkled pellicle, which was easily detached.

The whole of the mucous membrane of the œsophagus was greyish white, shrivelled, and easily detached, leaving an inflamed surface behind.

On opening the belly the stomach was seen to be much dilated and completely blackened. The coils of intestine in the neighbourhood were also blackened, and the parietal peritoneum covering the anterior abdominal wall was in the same condition. The peritoneal cavity contained no gas, but a few ounces of brownish, extremely acrid fluid. There was no perforation of the stomach or bowel, and the fluid above mentioned had evidently soaked through the wall of the stomach, this being of the consistence of wet blotting-paper in parts. The stomach wall was thinned, friable, and absolutely black both inside and out. The tissues of the lesser sac of the peritoneum, the greater and lesser omentum, the covering of the pancreas, and the tissues over the left kidney were similarly blackened. On opening the stomach the contents were found to consist of a thin black fluid, which caused considerable smarting of the hands. In parts the blackened mucous membrane could be scraped off, leaving a vividly injected patch beneath elsewhere no such separation could be effected, the wall being uniformly

blackened. The pyloric extremity had suffered least. The duodenum, like the stomach, was much dilated, and its mucous membrane was also blackened. In the mesentery attached to the upper part of the small intestine were numerous recent haemorrhages, some bright red, and others brownish; these were largest and best marked close to the bowel. Beyond the duodenum the mucous membrane of the small intestine for 78 inches was thick, grey, and necrotic, resembling that of the oesophagus. Below this the intestine was normal.

The pancreas, on section, appeared minutely injected, and was soft and large. The liver was pale and fatty, and very friable. The spleen was small and firm. The kidneys appeared somewhat swollen, but together they only weighed $9\frac{1}{4}$ ounces. The capsules were thick and adherent, stripping in laminæ, and leaving a granular surface. On section the cortex and medullæ of each were vividly injected, and with difficulty distinguished, the condition probably being early granular kidney in a state of acute inflammation.

The lungs were intensely congested. The myocardium was pale and exceedingly friable. The remaining viscera were normal.

S U R G I C A L R E P O R T.

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S U R G I C A L R E G I S T R A R.

General Surgical Statement.

Number of surgical beds—266 (this includes all beds in children's ward).*

„	of surgical patients in hospital, January 1st, 1899	{	Males 117	
„	„		Females 88	
„	„	„	December 31st, 1899	{ Males 132
„	„	„		Females 76
„	„	„	treated to a termination in 1899	. 3430
		Total.	Males.	Females.
Discharged cured	2313	... 1472	... 841	
„ relieved	744	... 453	... 291	
„ unrelieved	163	... 95	... 68	
Died	210	... 140	... 70	
Totals	3430	2160	1270	

Average number of days in hospital—22·16.

Death rate = 6·12 per cent.

(Ophthalmic cases are not included in the above statement.)

* 40 beds were closed during the greater part of the year, owing to structural alterations.

TABLE I.—*Abstract, showing Diseases, &c., in Classes,*

DISEASE.	Total.	Sex.		Age.						Duration before admission.									
		M.	F.	1-5	6-10	11-20	21-30	31-40	41-50	51-60	61-70	(61+)	Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12	Chronic	Not stated.
GENERAL DISEASES.																			
Erysipelas . . .	47	26	21	8	4	5	6	5	8	9	2	29	8	3	...	...	...	...	7
Pyæmia . . .	4	4	...	2	1	...	1	...	...	...	...	3	1	...	...	...	...	...	...
Septicæmia . . .	1	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...
Tetanus . . .	2	2	...	...	...	...	1	...	1	2	...	...	...	...	...	...	...	...	...
Syphilis, congenital .	5	3	2	3	1	1	...	...	...	1	...	1	...	1	...	...	...	2	1
" secondary .	2	2	...	...	...	1	...	1	1	...	1	1	1	1	...	...	...	...	...
" tertiary .	16	9	7	...	...	5	7	2	1	1	1	...	1	1	2	5	...	4	3
LOCAL DISEASES.																			
<i>Carcinoma—</i>																			
<i>Spheroidal—</i>																			
Breast . . .	40	...	40	...	...	1	6	11	12	10	...	1	2	4	12	14	7	...	
" recurrent in scar .	8	...	8	...	...	1	3	3	1	...	...	...	3	4	...	1	...	...
" " in glands .	5	...	5	...	...	1	1	1	1	1	...	2	1	1	...	...	1	...	
" secondary in liver .	1	...	1	...	...	...	...	1	...	1	...	...	...	1	...	...	1	...	
Antrum . . .	1	...	1	...	...	...	1	...	...	...	...	...	...	1	...	...	1	...	
Nose . . .	1	...	1	...	...	...	1	...	1	...	...	...	...	...	...	...	1	...	
Orbit . . .	1	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	
Axillary glands . . .	1	...	1	...	...	...	1	...	1	...	...	...	...	1	...	...	1	...	
Pylorus . . .	4	4	...	...	...	...	...	3	1	...	...	...	1	2	1	...	1	...	
Parotid . . .	2	2	...	...	...	...	...	...	2	...	...	...	...	...	2	...	...	2	...
Neck . . .	1	1	...	...	...	...	...	1	...	1	...	...	...	...	1	...	1	...	
Glands of neck . . .	2	2	...	...	...	...	1	1	...	...	...	...	1	...	1	...	1	...	
Cæcum . . .	1	1	...	...	...	1	...	1	...	...	...	...	...	...	...	...	1	...	
Larynx . . .	1	1	...	...	...	1	...	1	...	1	...	...	1	...	1	...	1	...	
Floor of mouth . . .	1	1	...	...	...	1	...	1	...	1	...	...	...	1	...	1	...	1	...
<i>Columnar—</i>																			
Breast . . .	2	...	2	...	...	1	1	...	...	...	...	...	...	1	...	1	...	1	...
Stomach . . .	4	4	...	...	...	1	3	...	...	...	...	...	...	3	...	3	...	1	...
Cæcum . . .	3	2	1	...	...	1	1	1	1	...	...	1	1	1	1	...	1	...	
Colon, ascending .	4	1	3	...	...	2	2	...	...	...	...	...	1	1	2	1	...	1	...
" transverse .	4	...	4	...	...	1	3	...	...	1	...	1	1	2	...	...	1	...	
" descending .	1	...	1	...	...	1	...	1	...	1	...	...	1	...	1	...	1	...	
" sigmoid flexure .	5	3	2	...	...	5	...	5	...	...	...	1	1	1	1	...	1	2	1
Rectum . . .	25	12	13	...	2	4	8	6	5	...	1	...	...	6	9	9	9	9	1
Thyroid . . .	2	...	2	...	...	2	...	2	...	...	...	...	2	...	2	...	2	...	

according to Authorised Nomenclature.

Dys. 1-4	Dys. 5-13	Wks. 2-4	Duration of residence.				Result.				Remarks.	
			Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	
6 1	21 ...	12 1	7 2	1 ...	...	...	...	...	38 2	1 ...	8 2	Chronic renal 1. Arising from septic umbilical cord 1; from radical cure for hernia 1.
...	...	...	1	...	...	...	...	...	...	...	1	2
...	1	2	1	...	1	...	...	...	...	3	2	...
...	2	...	...	...	...	...	...	...	2	...	...	...
...	7	7	2	...	...	...	...	...	6	10	...	...
1 ...	1 3	23 4	15 1	...	...	...	...	...	35 2	3 3	2 3	Carcinoma in both breasts 2. Colloid carcinoma 1; recurrent in scar and glands 4.
...	1	...	4	...	...	...	...	...	4	1	...	Double oöphorectomy 1; antitoxin 1; oöphorectomy and thyroid extraction 1.
1 ...	...	...	...	...	...	...	...	...	...	...	1	...
...	1	...	...	...	...	...	...	...	...	1	...	...
...	1	...	...	...	...	...	...	...	1	...	...	Recurrent after 11 years.
...	1	...	...	...	...	...	...	...	1	...	...	...
...	1	...	...	...	...	...	...	...	1	...	...	Primary of finger, removed 2 years previously.
...	2	1	1	...	...	...	...	...	2	1	2	Gastro-jejunostomy 2; pyloreectomy 1, readmitted 10 months later for gastro-jejunostomy.
1 ...	1 1	...	...	...	...	...	...	...	2	1	...	Same case.
...	1	...	...	...	...	...	...	...	1	...	...	...
1 ...	1	...	...	...	...	...	...	...	2	...	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...
...	2	...	...	...	...	...	...	...	2	...	...	...
1 ...	3	...	...	...	...	...	...	...	1	1	2	Gastro-jejunostomy 3; cœliotomy 1.
1 ...	2	...	...	...	...	...	...	...	1	1	1	Obstruction 2.
2 ...	2	...	...	...	...	...	...	...	2	1	1	...
...	1	3	...	...	...	...	...	...	3	1	...	1 case readmitted twice.
...	1	...	...	...	...	...	...	...	...	1	...	Obstruction.
1 ...	1	2	...	1	...	...	...	...	2	1	1	Obstruction 2; readmitted 1.
...	8	4	9	3	1	...	...	...	6	12	3	4 Readmitted 1. Obstruction and general peritonitis 1.
...	2	...	...	...	...	...	...	...	2	...	...	Same case.

TABLE I.—*Abstract, showing Diseases, &c., in Classes,*

DISEASE.	Total.	Sex.		Age.						Duration before admission.								
		M.	F.	-5 1	10 4	20 -20	30 -30	40 -40	50 -50	60 + 60	Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12	Chronic.	Not stated.
LOCAL DISEASES—continued.																		
<i>Carcinoma</i> —continued.																		
<i>Squamous</i> —																		
Scalp	1	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1
Cheek	5	1	4	...	...	...	...	2	1	2	...	...	...	1	1	2	1	...
Lip	10	9	1	...	...	...	...	2	1	7	...	...	5	1	3	1	...	
Nose and pharynx .	1	1	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...
Tongue	14	11	3	...	...	...	...	2	5	4	3	...	...	4	4	4	2	...
“ recurrent	3	3	...	...	...	...	...	1	1	1	...	...	1	1	...	1	...	
Glands of neck .	4	4	...	...	...	...	...	...	2	1	1	...	1	2	...	...	1	...
Floor of mouth .	6	4	2	...	...	...	...	1	...	2	3	...	1	1	4	...	...	...
Palate	5	4	1	...	...	...	...	...	3	2	...	3	...	...	1	1	1	...
Tonsil	6	6	...	...	...	...	...	...	1	1	4	...	1	3	...	2	...	...
Alveolar border .	6	4	2	...	...	...	...	1	1	2	...	2	1	...	3	1	1	...
Pharynx	2	1	1	...	...	...	...	1	...	1	...	...	...	1	1	...	...	...
Larynx	2	1	1	...	...	...	...	1	...	1	...	...	1	1	...	...	...	...
Esophagus	9	7	2	...	...	...	...	3	5	1	...	...	3	3	3	...	...	...
Glands of groin .	3	3	...	...	...	...	...	2	1	...	...	...	1	2	...	...	...	...
Scrotum	1	1	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...
Penis	1	1	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...
Bladder	5	4	1	...	...	...	...	1	2	2	...	...	2	1	...	...	2	...
Uterus	1	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
Ovary	1	...	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
Kidney	1	...	1	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...
Hand	1	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
Arm	1	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
Leg	1	1	...	...	...	...	...	1	...	...	...	...	...	1	...	...	1	...
Rodent ulcer	5	3	2	...	...	...	...	1	2	2	...	...	...	...	...	5	...	...
“ recurrent	5	3	2	...	...	...	...	5	...	...	...	...	2	3	...	...	...	...
<i>Sarcoma</i> —																		
Naso-pharynx	6	6	...	...	5	...	...	1	...	...	...	...	5	1	...	...	...	...
Orbit	1	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
Cheek	2	...	2	...	2	...	...	...	...	...	...	2	...	...	...	...	...	...
Upper jaw	4	1	3	...	...	1	...	1	1	1	1	...	2	2	...	...	...	...
Pituitary body	1	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
Parotid	1	...	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
Undescended testicle .	1	1	...	...	...	...	...	1	...	...	...	...	...	...	1	...	1	...
Ovary	1	...	1	...	...	1	...	1	...	...	...	...	1	...	...	...	...	...
Scapula	1	1	...	...	...	1	...	1	...	...	...	...	...	1	...	1	...	...
Thyroid	1	1	...	...	...	1	...	1	...	...	...	...	...	...	1	...	1	...
Neck	1	1	...	...	...	1	...	1	...	...	...	...	...	1	...	1	...	...
Kidney	1	1	...	...	...	1	...	1	...	...	1	...	...	1	...	1	...	...
Finger	1	1	...	...	1	...	1	...	1	...	...	...	...	...	1	...	1	...
Pelvis	2	2	...	1	...	1	...	1	...	1	...	...	1	...	...	1	...	1

according to authorised Nomenclature—continued.

TABLE I.—*Abstract, showing Diseases, &c., in Classes,*

DISEASE.	Total.	Sex.		Age.								Duration before admission.								Chronic.	Not stated.
		M.	F.	5	10	20	30	40	50	60	60+	Dys.	Dys.	Wks.	Mts.	Mts.	Mts.	Mts.			
LOCAL DISEASES—continued.																					
<i>Sarcoma—continued.</i>																					
Hip	2	2	2	2	..	
Femur	5	4	1	..	1	1	..	1	2	..	..	..	..	..	2	2	..	1	..
Tibia	3	1	2	..	..	2	..	..	1	..	..	..	..	1	2	..	..	..	..
<i>Simple tumours—</i>																					
Lipoma	17	9	8	1	..	5	6	1	3	1	..	..	1	1	2	1	12	..	..
Polypi	11	5	6	..	..	4	2	3	1	1	..	..	..	..	4	1	5	1	..
Fibroma	10	4	6	..	..	1	4	2	1	1	1	..	..	..	3	3	4	..	..
Fibro-myoma	3	..	3	..	..	1	2	..	..	..	..	..	..	..	1	..	2	..	..
Exostosis	8	3	5	..	..	3	4	1	..	..	..	..	..	1	..	..	6	1	..
Osteoma	1	..	1	1	1	
Fibro-adenoma	19	..	19	..	..	2	9	4	4	..	..	..	..	4	4	5	6	..	..
Adenoma	8	..	8	..	..	1	2	2	3	..	..	..	..	2	2	2	3	1	..
Adeno-myxoma	1	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..
Adeno-sarcoma	1	..	1	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..
Chondro-adenoma	1	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..
Calcifying “adenoma”	1	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..
Papilloma	7	6	1	1	..	1	1	..	1	1	2	..	..	2	..	3	2	..	..
Nævus	5	1	4	5	..	..	..	..	..	..	..	..	..	..	3	2	..	..	..
Neuroma	2	2	..	..	..	..	1	1	..	..	..	..	..	1	..	1	..	..	..
Adenoids	17	6	11	4	2	9	2	..	..	..	..	..	..	1	5	1	6	4	..
<i>Tumours, undetermined—</i>																					
Glands of neck	2	1	1	..	..	..	1	1	..	..	..	..	..	..	..	1	1	..	..
Nasal septum	1	..	1	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..
Arm	1	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..
Foot	2	2	..	..	..	..	2	..	..	..	..	..	..	..	..	1	..	1	..
Chest wall	1	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..
Liver	1	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..
Abdomen	1	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..
Periurethral	1	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..
Kidney	1	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..
<i>Cysts—</i>																					
Dermoid	2	1	1	..	..	1	1	..	..	..	..	..	..	..	..	..	2	..	..
Thyro-lingual	1	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..
Ranula	2	1	1	..	1	1	..	..	..	..	..	..	..	..	2	..	..	..	..
Appendicular	4	2	2	..	..	1	..	3	..	..	..	..	..	..	3	1	..	..	..
Branchial	1	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..
Hydatid	2	1	1	..	..	1	1	..	..	..	..	..	..	..	..	..	1	..	..

according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.		
...	1	...	1	...	...	...	...	...	1	...	1	...	Same case. Round-celled.
...	1	...	4	...	...	...	...	...	2	2	1	...	Endosteal 2, periosteal 3; giant-celled 2, round-celled 1.
...	...	...	3	...	...	...	...	...	2	1	...	...	Parosteal 1, periosteal 2; spindle-celled 2, chondrifying 1.
...	11	6	...	...	...	...	...	...	16	...	1	...	Diffuse of neck, operation not advised 1.
4	7	...	...	...	...	...	...	...	11	...	...	...	Nasal 9, pharyngeal 1, rectal 1.
1	7	1	1	...	...	...	...	...	10	...	...	...	Calcifying 1.
...	1	1	1	...	...	...	...	...	1	...	2	...	Uterus 3; readmitted 1.
2	5	1	...	...	...	...	...	...	8	...	...	...	Subungual 4, radius 1, femur 1, metatarsal 1, septum nasi 1.
...	...	1	...	...	...	...	...	...	1	...	...	...	Of brachialis anticus; secondary haemorrhage; ligation of brachial.
...	10	9	...	...	...	...	...	...	18	...	1	...	Cystic 4; fistula in ano 1.
...	6	2	...	...	...	...	...	...	8	...	...	...	Cystic 2.
...	1	...	...	...	...	...	...	...	1	...	...	...	Parotid.
...	...	1	...	...	...	...	...	...	1	...	...	...	Breast.
...	...	1	...	...	...	...	...	...	1	...	...	...	Submaxillary gland.
...	...	...	1	...	...	...	...	...	1	...	...	...	Ulcerating, on back.
...	1	3	2	1	...	...	...	...	6	...	1	...	“At own request” 1. Larynx 2, tongue 2, bladder 1, penis 1, anus 1.
...	1	2	2	...	...	...	...	...	2	2	...	1	Fatal: congenital syphilis.
...	2	...	...	...	...	...	...	...	1	1	...	...
8	8	1	...	...	...	...	...	...	17	...	...	...	Tonsils 5, deflected septum 1, hypertrophied turbinates 3.
...	...	2	...	...	...	...	...	...	1	1	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...	? Granuloma.
...	...	1	...	...	...	...	...	...	1	...	...	...	? Chondroma.
...	1	...	1	...	...	...	...	...	1	1	...	...	Diphtheria 1.
...	...	...	1	...	...	...	...	...	1	...	...	...	? Sarcoma.
...	1	...	...	...	...	...	...	...	1	...	...	...	? Carcinoma.
1	...	...	...	...	...	...	...	...	1	...	...	...	? Carcinoma.
...	...	1	...	...	...	...	...	...	1	...	...	...	? Epithelioma.
...	...	...	1	...	...	...	...	...	1	...	...	...
...	2	...	...	...	...	...	...	...	2	...	...	...	Orbit 1, neck 1.
...	1	...	...	...	...	...	...	...	1	...	...	...
...	...	2	...	...	...	...	...	...	2	...	...	...
...	2	2	...	...	...	...	...	...	4	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...
...	...	1	1	...	...	...	...	...	1	1	...	...	Liver 1, thigh 1.

TABLE I.—Abstract, showing Diseases, &c., in Classes,

according to authorised Nomenclature—continued.

Yrs.	Dys.	Wks.	Duration of residence.				Result.				Remarks.	
			Mts. 1-5	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	
1	4	...	...	...	...	...	...	...	5	...	...	Suppurating 1.
1	...	...	...	...	...	...	...	...	1	...	...
1	1	...	...	...	...	...	...	...	2	...	...	Origin not determined.
...	1	1	...	...	...	...	...	...	2	...	...
1	...	...	...	...	...	...	...	...	1	...	...
1	...	...	...	...	...	...	...	...	1	...	...
1	1	...	...	...	...	...	...	...	2	...	...
...	1	...	...	...	...	...	...	...	1	...	...	Cyst contained daughter-cysts.
1	...	...	...	...	...	...	...	...	1	...	...	Gangrene of lung. Transferred to Medical.
...	...	...	...	1	...	...	...	...	1	...	...	Thigh.
...	3	2	...	...	...	...	...	...	5	...	...	Twisted pedicle 1.
...	...	1	...	...	...	...	...	...	1	...	...	Twisted pedicle.
1	1	1	...	...	...	...	...	...	3	...	...
2	2	1	...	...	...	...	...	...	5	...	...
4	9	129	28	2	...	...	...	159	9	4	...	Hernia of both sides 20; undescended testicle 6; phimosis 2; varicocele 5. Pyæmia 1, <i>vide</i> Special Table III.
1	2	6	4	...	...	...	...	10	2	1	...	Irreducible on one side, with reducible on the other, 1; irreducible on both sides 1; varicocele 1.
4	3	13	...	...	...	...	...	20	...	...	...	Double 2.
...	7	3	...	...	...	...	...	10	...	...	...	Removal of appendix which was in the sac 1.
...	5	3	...	...	...	...	...	8	...	...	...
1	4	10	2	...	...	...	...	17	...	3	...	Inflamed 1.
2	1	3	1	...	...	...	...	4	2	1	...	
4	...	7	1	...	...	...	...	7	1	4	...	1 strangulated for third time, and readmitted 2 months later for fourth time of strangulation. Fibroid of uterus 1.
...	1	1	...	...	...	...	...	2	...	...	...
...	3	1	...	...	...	...	...	4	...	...	...
1	1	1	1	1	...	...	...	3	...	2	...	Recurrent 1.
1	1	...	...	...	...	...	...	1	...	...	...	Previous nephrectomy.
1	1	9	8	1	...	...	...	16	1	...	6	General peritonitis 9, empyema 1, subphrenic abscess 1, empyema and subphrenic abscess 1.
1	27	6	2	1	...	...	...	32	4	1	...	
1	1	1	1	...	...	...	...	2	...	2	...	
1	...	...	...	...	...	...	...	1	...	...	...	General peritonitis.
1	...	1	...	...	...	...	...	1	...	2	...	Previous inguinal hernia 2; previous ovariotomy 1.

TABLE I.—Abstract, showing Diseases, &c., in Classes,

according to authorised Nomenclature—continued.

Dys. 1-4	Dys. 5-13	Duration of residence.						Result.				Remarks.	
		Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. + 12	C.	R.	U.	I.D.	
1	3	...	...	...	...	...	...	...	1	1	1	1	Transferred to Medical. <i>Vide 'Clinical Society's Transactions,' 1900.</i>
1	1	...	...	...	...	...	...	...	1	...	...	...
1	1	...	...	...	...	...	...	...	1	...	...	...
1	1	...	...	...	...	...	...	...	1	...	...	1	Lateral anastomosis of transverse colon to sigmoid flexure.
1	1	...	...	...	...	...	...	...	1	...	...	1	
1	1	...	...	...	...	...	...	...	1	...	...	1	
10	16	...	...	...	...	...	...	...	25	1	...	...
1	11	47	9	...	...	...	...	...	57	9	1	1	Fatal: septicæmia.
1	2	2	2	...	...	...	...	...	2	3	...	1	Previous colotomy 1.
1	1	...	...	4	...	...	...	...	2	...	...	...
1	2	3	...	...	...	...	...	...	2	4	...	...	Readmitted 1.
1	1	1	1	1	...	...	...	...	3	...	...	...
1	2	4	6	1	...	...	...	...	10	1	1	2	Fatal cases: hepatic abscess 1, general peritonitis 1.
...	...	1	...	...	...	...	...	...	1	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...	Cause not found.
2	3	2	...	...	...	...	...	...	7	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...
4	11	14	10	4	...	...	...	...	17	18	1	7	Extravasation of urine 9, retention 12, erysipelas 1.
...	5	8	6	4	1	...	...	...	1	21	...	2	Prostatectomy 3; readmission 1.
...	1	...	...	...	...	...	...	...	1	...	...	...
3	8	2	...	...	...	...	...	...	13	...	...	...
1	...	...	...	...	...	...	...	...	1	...	...	...
1	2	...	...	...	...	...	...	...	3	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...
1	...	...	...	...	...	...	...	...	1	...	...	...
1	...	...	...	...	...	...	...	...	1	...	...	...
1	...	...	...	...	...	...	...	...	1	...	...	...	Transferred to Gynaecological.
1	...	...	...	...	...	...	...	...	1	...	...	...
1	...	...	...	...	...	...	...	...	1	...	...	...
1	...	...	...	...	...	...	...	...	1	...	...	...
...	...	1	2	...	...	...	...	...	1	1	...	1	Readmitted 1. Fatal: pyonephrosis.
...	1	...	...	...	...	...	...	...	1	...	...	...
1	...	...	...	...	...	...	...	...	1	...	...	...
1	2	3	1	...	...	...	...	...	3	3	...	1	Fatal: pyonephrosis.
...	1	1	...	...	...	...	...	...	2	...	...	...

TABLE I.—Abstract, showing Diseases, &c., in Classes,

according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys.	Dys.	Wks	Mts.	C.	R.	U.	D.							
1-4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	+12						
...	2	...	...	...	...	...	...	...	2	...				
...	2	1	5	...	...	...	...	...	4	1	3	...		Twisted ureter with hydronephrosis 1.
2	...	1	2	...	...	...	...	...	2	2	1	...		
...	1	2	2	...	...	...	...	...	3	1	1	...		
...	...	1	1	...	...	...	...	...	2	...	...	...		Congenital cystic kidney 1; occlusion of ureter 1.
...	1	2	3	1	...	...	...	...	6	1	...	...		Readmitted 1; hydronephrosis 1.
1	1	2	4	...	...	...	...	...	4	...	2	2	"At own request" 1.	
...	...	2	1	...	...	...	...	...	2	1	...	...		Readmitted 1.
...	2	5	6	...	...	...	...	...	12	...	1	...		
...	2	1	...	...	...	...	...	...	3	...	...	...
...	3	2	...	...	...	...	...	...	1	3	1	...		"At own request" 1; ? cause 3.
2	1	12	2	...	...	...	...	...	14	...	3	...		Varicocele 1.
...	1	5	2	...	...	...	...	...	5	2	1	...		Prostate affected 1; diabetes 1.
...	...	1	...	...	...	...	...	...	...	...	1	...		
...	1	...	...	...	...	...	...	...	...	1	...	...
...	2	10	3	...	...	...	...	...	15	...	...	...
...	1	3	...	...	...	...	...	...	4	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...
1	3	7	...	...	...	...	...	...	9	1	1	...		Intra-cystic cysts. With cysts 2.
...	...	2	...	...	...	...	...	2	...	...	...	...
...	...	...	1	...	...	...	...	...	1	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...		Aneurysms of both femorals and of thoracic aorta.
2	12	66	10	...	...	...	...	...	87	...	3	...		Double 48; hydrocele 1, varicocele 1, phimosis 1; canal of Nuck 1; lower extremity 89; septicaemia 1.
2	30	36	3	...	...	...	...	...	68	...	3	...		Readmitted 1; albuminuria 1; double 4; varicose veins 3; hydrocele 1.
1	...	1	1	...	...	...	...	...	1	...	2	...		
...	2	1	1	...	...	...	...	...	1	1	2	...		
...	1	1	...	...	...	...	...	...	...	1	1	...		
...	...	1	1	...	...	...	...	...	2	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...
...	1	2	...	...	...	...	...	...	3	...	...	...
1	...	...	...	...	...	...	...	...	1	...	...	...

TABLE I.—*Abstract, showing Diseases, &c., in Classes,*

DISEASE.	Total.	Sex.		Age.						Duration before admission.						Chronic.	Not stated.	
		M.	F.	5	10	20	30	40	50	60	60+	Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12	
CIRCULATORY SYSTEM—continued.																		
Thrombosis of veins .	5	2	3	...	...	2	2	...	1	...	4	...	...	...	...	...	...	1
Nævoid tumour of arm .	1	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
Varix of facial vein .	1	...	1	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...
LYMPHATIC SYSTEM.																		
Adenitis, simple .	10	6	4	2	...	1	6	1	...	...	2	3	4	1	...	...	...	...
,, tuberculous .	92	38	54	4	8	27	37	12	1	2	1	1	1	18	17	18	36	1
Lymphangitis .	1	1	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...
Elephantiasis .	2	2	...	...	...	...	...	1	1	...	...	...	...	...	...	1	1	...
Lymphatic varices .	1	1	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...
Edema of scrotum .	1	1	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...
Lymphangioma .	1	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Lymphadenoma .	2	2	...	...	1	1	...	...	...	...	...	...	...	...	...	2	...	...
THYROID.																		
Goitre, parenchymatous .	4	2	2	...	2	1	...	1	...	...	...	...	...	...	...	1	3	...
,, adenoma .	5	2	3	...	1	1	2	1	...	...	...	1	1	1	1	2	...	...
,, cyst .	5	1	4	...	1	2	2	...	...	...	...	1	2	...	1	2	...	2
OSSEOUS SYSTEM.																		
<i>Acute epiphysitis—</i>																		
Humerus .	1	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Tibia .	2	...	2	2	...	...	...	...	...	...	2	...	...	...	...	...	...	...
<i>Acute infective periostitis—</i>																		
Femur .	1	1	...	1	...	1	...	...	...	...	1	...	...	...	...	...	...	...
Tibia .	1	...	1	...	1	...	1	...	...	...	1	...	...	...	...	...	...	...
<i>Acute infective osteomyelitis—</i>																		
Humerus .	2	2	...	1	1	...	1	1	...	...	...	...	...	1	1	...	...	...
Femur .	2	1	1	...	2	...	...	...	...	...	...	...	...	...	...	...	2	...
Tibia .	1	1	...	1	...	1	...	...	...	...	1	...	...	...	...	...	...	...
<i>Periostitis—</i>																		
Superior maxilla .	1	...	1	...	1	...	1	...	...	...	...	...	...	...	...	...	1	...
Inferior maxilla .	2	...	2	...	2	...	2	...	...	...	1	...	...	...	...	1	...	...
Femur .	1	1	...	1	...	1	...	1	...	...	...	...	...	1	...	...	1	...
Tibia .	2	...	2	...	1	...	1	1	...	...	...	...	...	1	...	1	1	...
<i>Osteitis—</i>																		
Humerus .	1	1	...	1	...	1	...	1	...	...	...	...	...	1	...	...	1	...
Tibia .	2	2	...	1	1	...	1	1	...	...	...	...	...	...	1	...	1	1

according to authorised Nomenclature—continued.

Duration of residence.								Result.				Remarks.
Dys.	Dys.	Wks	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.	
1-4	5-13	2-4	1-2	2-4	4-6	6-9	9-12 + 12					
...	1	3	1	...	...	...	...	4	1	...		
...	1	...	...	...	...	...	...	...	...	1	...	
...	1	...	...	...	...	...	...	1	...			
...	5	2	3	...	...	...	...	10	...	...
1	42	42	6	1	...	...	...	46	44	2	...	Readmission 8.
1	...	...	...	...	...	...	...	1	...			
...	...	2	...	...	...	...	...	2	...	...	Scrotum 1, legs 1.	
...	...	1	...	...	...	...	...	...	1	...		
1	...	...	...	...	...	...	...	...	1	...		
...	...	1	...	...	...	...	...	...	1	...		
...	1	1	...	...	...	...	...	1	1	...		
1	1	2	...	...	...	...	...	2	1	1	...	Refused operation 1.
...	...	4	1	...	...	...	...	5	...			
...	1	3	1	...	...	...	...	4	1	...		
...	...	...	...	...	...	...	...	1	...			
1	1	1	...	...	...	...	...	1	...			
1	1	...	...	...	...	...	...	1	...	1	Fatal: septic pericarditis.	
1	...	...	...	...	...	...	...	1	...			
1	1	...	...	...	...	...	...	1	...			
...	1	1	...	...	...	...	...	2	...			
...	2	...	...	...	...	...	...	2	...			
...	1	...	...	...	...	...	...	1	...			
1	...	...	...	...	...	...	...	1	...			
2	...	...	...	...	...	...	...	2	...			
1	...	...	...	...	...	...	...	1	...			
2	...	...	...	...	...	...	...	1	1	...	Gummatus.	
1	...	...	...	...	...	...	...	1	...		Gummatus 1.	
...	1	1	...	...	...	...	...	1	...			
...	1	1	...	...	...	...	...	1	1	...		

TABLE I.—Abstract, showing Diseases, &c., in Classes,

according to authorised Nomenclature—continued.

Dys.	Dys.	Duration of residence.					Result.				Remarks.			
		Wks 1-4	Mts. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R	U	D.
...	...	1	...	1	...	...	...	...	...	2	...	...	...	Same case.
...	1	1	...	...	...	...	...	...	...	2	...	...	...
...	...	1	...	...	...	...	...	...	...	1	...	...	...
...	...	1	...	...	...	...	...	...	...	1	...	...	...
2	4	...	...	...	...	...	...	...	...	4	2	...	...	Readmitted 1.
...	1	...	...	...	...	...	...	...	...	1	...	...	...
...	...	1	...	...	...	...	...	...	...	1	...	...	...
...	1	4	...	...	...	...	...	...	...	3	1	...	1	Fatal: marasmus.
3	4	4	3	...	...	...	...	...	...	1	12	1	...	Readmission 2; ilium 10, ischium 1, pelvis 1, sacrum 2.
...	1	1	4	...	...	...	...	...	...	2	4	...	...
...	2	2	1	...	...	...	...	...	...	2	3	...	...
2	4	2	...	...	...	...	...	...	...	3	5	...	...	Readmission 1.
...	1	...	...	...	...	...	...	...	...	1	...	...	...
...	2	...	...	...	...	...	...	...	...	2	...	...	...
...	...	1	...	...	...	...	...	...	...	...	1	...	...
...	1	...	...	...	...	...	...	...	...	1	...	...	...
...	1	...	...	...	...	...	...	...	...	1	1	...	...	Congenital syphilis 1.
2	...	1	...	...	...	...	...	...	...	1	1	...	...	"At own request" 1.
2	7	2	2	1	...	...	...	...	...	9	5	...	...
...	1	1	...	...	...	...	...	...	...	2	...	...	...	Previous compound fracture 1.
...	1	...	1	...	...	...	...	...	...	1	1	...	...
...	1	...	...	...	...	...	...	...	...	1	...	...	...
...	1	1	4	1	...	...	...	...	...	3	4	...	...	Readmission 1.
...	2	7	7	...	1	...	...	1	...	1	16	...	...	Readmission 5; erysipelas 1, <i>vide</i> Special Table II.
...	1	...	...	...	...	...	...	...	...	1	...	...	...
...	...	1	...	...	...	...	...	...	...	1	...	...	...
...	1	...	...	...	...	...	...	...	...	1	...	...	...
...	2	7	7	...	1	...	...	...	3	14	...	...	...	Readmission 2.
1	...	...	...	...	...	...	...	...	...	1	...	...	...
1	...	...	1	...	...	...	...	...	1	...	...	...	...	Fibrous.

TABLE I.—*Abstract, showing Diseases, &c., in Classes*

DISEASE.	Total.	Sex.		Age.						Duration before admission.								
		M.	F.	10	20	30	40	50	60	1-4	5-18	Wks.	Mts.	Mts.	Chronic			
ARTICULAR SYSTEM — con-																		
<i>Wrist—</i>															Not stated			
Tuberculous arthritis	4	2	2	1	3									2	1	1		
Septic arthritis	1	...	1		1								1					
<i>Hip—</i>																		
Tuberculous arthritis	59	30	29	3	18	27	3	4	2	2				6	6	9	36	2
Rheumatoid arthritis	2	1	1							2						1	1	
Puerperal arthritis	1	...	1				1							1				
Arthritis	1	1					1											1
Hysterical	1	...	1			1												1
<i>Knee—</i>																		
Tuberculous arthritis	39	27	12	8	10	7	9	3	1	1				1	1	4	8	25
Synovitis	3	1	2		2		1							1				2
Rheumatoid arthritis	6	5	1			1	4	1						1	1	2	2	
Puerperal arthritis	1	...	1				1									1		
Septic arthritis	2	1	1		1		1							1				1
Gonorrhœal arthritis	5	5				4	1							1	1	2		
Arthritis	2	1	1		2											1	1	
Hæmarthrosis	2	2			1		1											1
Ankylosis	5	2	3	1	3		1									1		4
Dislocation of semilunar cartilage	5	3	2		1	2	1	1		1				1	1			2
Loose body	1	1				1												1
<i>Ankle—</i>																		
Tuberculous arthritis	8	6	2	2	1	2	3						2		1	4	1	
Gonorrhœal arthritis	1	1					1											1
Ankylosis	1	1			1													1
Sacro-iliac disease	6	4	2		3	2	1							1	1	3	1	
Spondylitis deformans	2	1	1			1	1											2
Rheumatoid arthritis	1	1				1									1			
NERVOUS SYSTEM.																		
Neuralgia	1	1							1									1
Sciatica	2	2						1	1					1			1	
Painful scar	4	4			2		2								2			2
Coccydynia	1	1				1									1			
Vascular disease of pons	1	1					1							1				
? Cerebellar tumour	1	1		1			1										1	
Tuberculous meningitis	1	1		1												1		

according to authorised Nomenclature—continued.

TABLE I.—*Abstract, showing Diseases, &c., in Classes,*

DISEASE.	Total.	Sex.		Age.						Duration before admission.						Chronic.	Not stated.	
		M.	F.	5	10	20	30	40	50	60	+	Dys.	Dys.	Wks.	Mts.	Mts.	Mts.	
NERVOUS SYSTEM — <i>continued.</i>																		
Acute myelitis . . .	1	1	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...
Locomotor ataxy . . .	1	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
Post-anæsthetic paralysis . . .	1	1	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...
Post-diphtheritic paralysis . . .	1	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Splint paralysis . . .	2	2	...	...	2	...	...	...	...	...	...	...	...	...	...	...	2	...
Alcoholic neuritis . . .	1	...	1	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...
Hysteria . . .	2	1	1	...	1	1	...	...	...	...	...	...	...	...	...	...	2	...
RESPIRATORY SYSTEM.																		
Empyema	5	4	1	...	...	2	1	2	...	...	...	...	...	...	...	2	2	1
Cœdema of glottis . . .	1	1	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...
Stricture of trachea . . .	2	2	...	...	...	1	...	1	...	...	...	...	...	1	...	...	1	...
Inability to leave out tracheotomy tube . . .	1	1	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Hypertrophic rhinitis . . .	16	12	4	...	1	7	5	2	1	...	...	...	...	2	1	1	10	2
Atrophic rhinitis . . .	3	1	2	...	2	1	...	...	...	...	...	...	...	...	...	...	3	...
Empyema of antrum . . .	8	4	4	...	1	4	3	...	...	...	1	...	...	3	1	3	...	...
AUDITORY SYSTEM.																		
Aural polyp	1	1	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...
Otitis media suppurativa .	11	3	8	4	3	1	3	...	...	...	2	3	...	...	3	2	1	...
Do. and mastoid abscess .	44	25	19	5	6	13	12	4	1	2	1	1	5	4	10	1	3	16
Do. do. and thrombosis of sinus . . .	6	5	1	...	1	4	1	...	...	...	2	4	...	...	...	...	...	...
Do. do. and meningitis . . .	3	2	1	...	1	1	1	...	...	...	2	...	1	...	...	...	...	...
Do. do. and temporo-sphenoidal abscess . . .	5	3	2	...	4	...	1	...	...	...	2	...	2	1	...	...	...	...
Do. do. and cerebellar abscess . . .	2	2	...	...	...	...	1	...	1	...	...	1	1	...	...	...	...	...
Do. and temporal abscess . . .	1	...	1	...	...	...	...	1	...	...	...	1	...	1	...	...	...	...
Do. and tuberculous meningitis . . .	2	1	1	...	2	...	...	...	...	...	...	1	...	...	1	...	...	...
DISEASES OF SPINE.																		
Caries, cervical	6	6	...	4	1	1	...	...	...	...	...	...	...	1	3	2	...	2
“ dorsal	18	12	6	2	7	7	2	...	...	...	2	...	3	3	3	8	2	...
“ lumbar	18	6	12	2	3	6	5	2	...	...	...	2	4	4	8	...	...	...

according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys	Dys	Wks	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.		
1-4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	+12						
1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1	1	1	1	1	1	1	1	1	2	2	2	2	2	Same case.
1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1	1	1	1	1	1	1	1	1	2	2	2	2	2	
2	3	2	3	2	3	2	3	2	3	3	3	3	3	Readmission 1.
1	1	1	1	1	1	1	1	1	1	1	1	1	1	Patient swallowed ammonia.
1	1	1	1	1	1	1	1	1	2	2	2	2	2	Incised wound of neck 1, syphilitic 1.
1	1	1	1	1	1	1	1	1	1	1	1	1	1	
3	12	1	1	1	1	1	1	1	13	2	1	1	1	Readmission 2; influenza 1, adenoids 1, cleft palate 1.
1	3	7	1	1	1	1	1	1	1	2	2	2	2	Antrum of Highmore 8; readmission 1.
1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1	2	8	1	1	1	1	1	1	10	1	1	1	1	Readmission 1.
1	13	15	14	2	2	2	2	2	23	21	21	21	21	Readmission 5; erysipelas 1.
1	1	2	1	2	2	2	2	2	3	3	3	3	3	
2	2	1	1	1	1	1	1	1	3	3	3	3	3	Subdural abscess and thrombosis of cavernous sinus 1.
2	2	1	1	1	1	1	1	1	1	1	1	1	1	Readmission 1; temporo-sphenoidal and cerebellar 1.
1	1	1	1	1	1	1	1	1	2	2	2	2	2	
1	2	1	1	1	1	1	1	1	1	1	1	1	1	Diabetes. Transferred to Medical.
1	1	1	1	1	1	1	1	1	6	6	6	6	6	
1	2	5	6	4	4	4	4	4	1	16	16	16	16	One patient readmitted three times.
1	1	5	9	1	2	2	2	2	18	18	18	18	18	Readmission 1; dorsal abscess 5, psoas 6, lumbar 3. Fatal: general tuberculosis.
1	1	5	9	1	2	2	2	2	18	18	18	18	18	Readmission 2; psoas abscess 9, lumbar 5, dorso-lumbar 1; tuberculous glands 1.

TABLE I.—*Abstract, showing Diseases, &c., in Classes,*

DISEASE.	Total.	Sex.	Age.										Duration before admission.							
			M.		F.		5	10	20	30	40	50	60	Dys.	Dys.	Wks.	Mts.	Mts.	Mts.	Chronic.
			1	4	5	13	2	4	1	2	6	1	2	1	2	2	6	12	Not stated.	
DISEASES OF BURSÆ, &c.																				
Acute bursitis . . .	15	6	9	...	1	6	3	2	1	1	1	4	8	...	3
Chronic bursitis . . .	23	12	11	...	1	7	8	2	2	3	...	...	3	2	4	2	12	...	...
Ganglion, simple . . .	2	...	2	...	...	2	...	...	...	...	...	...	...	1	...	1	...	...	...
" multiple . . .	1	...	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...
Teno-synovitis, tuberculous	2	...	2	...	1	1	...	...	...	...	...	...	...	1	...	1	...	...	...
DISEASES OF SKIN AND CONNECTIVE TISSUE.																				
Acute abscess . . .	131	81	50	14	11	28	37	15	16	7	3	21	33	41	17	2	...	1	16	
<i>Tuberculous abscess—</i>																				
Neck	4	1	3	...	1	1	1	...	...	1	...	...	...	...	2	1	1	...	...
Face	4	...	4	...	...	2	1	1	...	...	...	...	...	3	1	...	...	...	...
Axilla	1	...	1	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Arm	1	...	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Forearm	1	...	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Chest	6	3	3	...	2	2	2	...	...	...	...	...	...	1	4	...	...	...	1
Breast	1	...	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...
Abdominal wall . .	1	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Pelvis	2	1	1	...	2	...	...	...	...	...	...	...	2	...	...	...	...	...	...
Buttock	3	1	2	...	1	2	...	...	...	...	...	...	1	1	1	...	1	...	...
Thigh	5	3	2	...	1	1	...	1	1	1	...	...	1	...	4	...	...	...	...
Knee	1	...	1	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	1
<i>Special abscess—</i>																				
Abdominal	2	1	1	...	1	1	...	...	...	...	...	1	...	...	1	...	...	...	...
Perinephritic . .	1	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...
Psoas abscess . .	2	2	...	1	...	1	...	...	...	...	...	...	1	...	1	...	...	...	...
<i>Ulcer—</i>																				
Simple	18	10	8	...	1	1	7	4	2	2	1	...	2	1	2	5	3	4	1	
Varicose	5	3	2	...	2	1	1	1	...	...	...	...	...	2	...	1	1	1	1
Perforating . . .	3	3	...	...	...	1	...	2	...	...	...	...	...	1	...	...	2	...	...
Tuberculous . . .	1	1	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Phagedænic . . .	2	...	2	1	...	1	...	...	...	...	...	2	...	...	...	...	...	...	...
<i>Sinus.</i>																				
Extremities . . .	42	29	13	2	5	6	14	5	1	7	2	...	2	3	11	11	8	5	2	
<i>Cellulitis—</i>																				
Extremities . . .	53	29	24	...	8	13	13	10	5	4	13	17	11	3	1	...	...	...	8
Neck	10	10	...	2	1	1	1	2	2	...	2	5	2	...	...	...	...	...	1
Scrotum and legs .	1	1	...	1	...	1	...	...	...	...	...	1	...	...	...	...	...	...	1

according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys. 1-4 5-13	Dys. 2-4	Wks.	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.		
1 8	8	4	2	...	...	...	...	...	15	...	...	...	Patellar 12, olecranon 2, metatarso-phalangeal 1.	
...	...	13	2	...	...	...	...	...	23	...	...	...	Patellar 13, sartorial 4, semimembranosus 2, quadriceps 1, acromial 1, metatarso-phalangeal 1, knee 1.	
...	2	...	...	...	...	...	...	...	2	...	...	...	Wrist 2.	
1	...	...	...	...	...	...	...	...	1	...	...	...	Wrist.	
...	1	1	...	...	...	...	...	...	2	...	...	...	Wrist 1, finger 1.	
14	68	37	11	1	...	...	...	...	123	7	1	...	Acute mania 1; transferred to Home 1; erysipelas 1.	
...	4	...	...	...	...	...	...	...	2	2	...	...	Caries of spine 1.	
...	2	2	...	...	...	...	...	...	1	3	...	...	Readmission 1.	
...	1	...	...	...	...	...	...	...	1	...	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...
...	4	2	...	...	...	...	...	...	6	...	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...
...	1	...	...	...	...	...	...	...	1	1	...	...
...	2	1	...	...	...	...	...	...	3	...	...	...
...	1	2	1	1	...	...	...	...	4	1	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...	Previous excision.	
...	...	1	1	...	...	...	...	...	1	1	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...
...	...	1	1	...	...	...	...	...	2	...	...	...	Cause?	
1	7	7	3	...	...	...	...	...	10	7	1	...	Readmission 1.	
1	1	2	...	1	...	...	...	...	2	3	...	...
1	1	1	...	...	...	...	...	...	3	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...
...	...	1	1	...	...	...	...	...	2	...	...	...	Breast 1, vulva 1.	
2	18	9	11	1	1	...	...	...	17	22	2	1	"At own request" 1; scarlet fever 1. Fatal: faecal fistula, tubercle of lungs, lardaceous disease.	
2	16	21	12	2	...	...	...	...	44	3	...	6	Fatal: pulmonary embolus 1, pneumonia 1, septicæmia 1, erysipelas 1.	
2	6	2	...	...	...	...	...	...	6	1	...	3		
1	...	...	...	...	...	...	...	...	1	...	...	...	Admitted moribund.	

TABLE I.—*Abstract, showing Diseases, &c., in Classes,*

DISEASE.	Total.	Sex.		Age.						Duration before admission.									
		M.	F.	5 1	10 2	20 7	30 7	40 7	50 6	60 6	65 5	Dys + 1-4	Dys 5-13	Wks	Mts.	Mts.	Mts.	Chronic	Not stated
DISEASES OF SKIN AND CONNECTIVE TISSUE—continued.																			
Tuberculosis of skin . . .	28	5	23	...	2	10	10	4	1	1	...	...	...	...	...	3	2	23	...
Acute eczema . . .	3	1	2	...	1	1	1	1	...	1	...	1	...	...	1	...	1	...	1
Chronic eczema . . .	1	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Herpes zoster . . .	1	1	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Carbuncle . . .	3	2	1	...	...	...	2	1	...	2	1	...	...	...	...	...	...	...	...
Sloughing vaccinia spots .	1	...	1	1	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...
Morphea . . .	1	...	1	...	1	...	1	...	...	1	...	1	...	...	...	...	...	...	...
Purpura rheumatica . . .	1	...	1	...	...	...	1	...	...	1	...	1	...	...	...	...	...	...	...
Scleroderma . . .	1	...	1	...	1	...	1	...	...	...	...	...	...	...	...	...	...	1	...
Erythema of leg . . .	1	...	1	...	1	...	1	...	...	...	...	1	...	...	...	...	...	...	1
" multiforme . . .	1	...	1	...	1	...	1	...	...	1	...	1	...	...	...	...	...	...	...
DEFORMITIES.																			
Talipes equino-varus . . .	33	24	9	16	7	6	3	1	...	...	...	...	1	...	...	2	30	...	...
" equinus . . .	7	3	4	...	1	4	2	...	...	...	...	...	1	...	...	5	1	...	...
" calcaneo-valgus .	1	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Torticollis . . .	8	5	3	2	1	3	2	...	2	...	...	...	...	...	...	2	6	...	...
Genu valgum . . .	10	5	5	1	2	6	1	...	...	...	...	...	1	...	1	...	8	...	...
" varum . . .	1	1	...	1	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...
" recurvatum . . .	1	...	1	...	1	...	1	...	...	...	...	...	...	...	...	...	1	...	...
Cicatricial contraction .	13	2	11	1	2	5	3	2	...	...	...	...	3	4	2	3	1	...	...
Hammer-toe . . .	14	10	4	...	7	7	...	...	...	...	...	...	...	2	...	11	1	...	...
Hallux valgus . . .	4	2	2	...	1	2	1	...	...	...	...	...	1	1	1	1	1	1	1
Pes planus . . .	11	4	7	...	5	6	...	...	...	...	...	...	1	1	3	1	5	...	...
" cavus . . .	3	3	...	2	...	1	1	...	...	...	...	...	...	...	...	3	...	...	...
Ingrowing toe-nail . . .	4	2	2	...	1	2	1	...	1	...	...	2	...	...	2	...	2	...	...
Deviated septum . . .	13	13	...	5	6	1	1	...	...	...	...	...	2	1	9	1	...	...	...
Deformed nose . . .	1	...	1	...	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...
Rachitic curvature . . .	2	2	...	2	...	...	...	...	...	...	...	...	...	...	...	2	...	2	...
Infantile paralysis . . .	2	2	...	1	1	...	...	...	...	...	...	...	...	...	...	2	...	2	...
Malunited fractures . . .	7	7	...	1	2	2	1	1	...	...	2	3	...	2	...	2	...	...	...
Deformity of hallux . . .	1	1	...	1	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...
Contraction of knee . . .	2	2	...	1	1	...	...	...	...	...	...	...	...	...	...	2	...	2	...
" of hand . . .	1	...	1	...	1	...	1	...	1	...	...	...	...	...	...	1	...	1	...

according to authorised Nomenclature—continued.

Duration of residence.										Result.					Remarks.
Dys.	Dys.	Wks.	Mts.	C.	R.	U.	D.								
1-4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	+12							
3	10	11	4	...	...	...	...	...	5	23	...	...	...	Readmission 6.	
...	3	...	...	...	...	...	...	...	3	...	...	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...	...
1	...	...	...	...	...	...	...	...	1	...	...	...	...
...	...	2	1	...	...	...	...	...	3	...	...	...	...	Back 2, neck 1; glycosuria 0.	
1	...	...	...	...	...	...	...	...	1	...	...	...	...
1	...	...	...	...	...	...	...	...	1	...	...	...	...
1	...	...	...	...	...	...	...	...	1	...	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...	...
1	...	...	...	...	...	...	...	...	1	...	...	...	...
1	9	12	5	6	...	...	...	...	23	9	1	...	...	Double 13. Paralytic 8, hysterical 1, webbed fingers 1. Septicæmia 1, diphtheria 1. Readmission 4.	
...	2	3	2	...	...	...	...	...	7	...	...	...	...	Double 1. Paralytic 1, traumatic 1, pes cavus 1.	
1	...	...	...	...	...	...	...	...	1	...	...	...	...
1	5	1	1	...	...	...	...	...	6	1	1	...	...	Spasmodic 2, difficult labour 4; diphtheria 1.	
1	1	2	1	4	1	...	...	...	2	4	4	...	...	Readmission 1. Double 6.	
...	...	1	...	...	...	...	...	...	1	...	...	...	...
1	1	9	2	...	...	...	...	...	10	2	1	...	...	Previous excision of knee.	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	Readmission 1. Palate 1, cheek 1, lip 1, nostril 1, arm 1, wrist 4, thumb 1, finger 3.	
1	6	6	2	...	...	...	...	...	13	...	1	...	...	Albuminuria 1. Double 9. Adenoids 1.	
1	1	2	...	...	...	...	...	...	3	...	1	...	...	“At own request” 1. Double 4. Contracted little toe 1.	
...	4	4	2	1	...	...	...	...	1	10	...	...	...	Double 4. Previous fractured astragalus 1. Readmission 1.	
...	...	1	1	1	...	...	...	...	2	1	...	...	...
1	...	...	...	...	...	...	...	...	4	...	...	...	...
1	6	6	...	...	...	...	...	...	12	...	1	...	...	Hypertrophic rhinitis 2, adenoids 1, scarlet fever 1.	
1	...	...	...	...	...	...	...	...	1	...	...	...	...
...	...	1	1	1	...	...	...	...	2	...	...	...	...	Tibia 2.	
...	...	1	1	...	...	...	...	...	1	1	...	...	...
1	2	3	1	...	...	...	...	...	5	1	1	...	...	Humerus 2, forearm 3, leg 1; separation of epiphysis of femur 1.	
...	...	1	...	...	...	...	...	...	1	...	...	...	...
1	...	...	1	...	...	...	...	...	1	1	...	...	...	Infantile paralysis 1.	
1	...	...	...	...	...	...	...	...	1	...	...	...	...

TABLE I.—Abstract, showing Diseases, &c., in Classes,

DISEASE.	Sex.	Age.										Duration before admission.													
		M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys	Dys	Wks	Mts.	Mts.	Mts.	Dys	Dys	Wks	Mts.	Mts.	Mts.	Chronic	Not stated.
	Total											1-4	5-13	2-4	1-2	2-6	6-12								
DEFORMITIES—continued.																									
Contraction of finger	1	...	1	...	1	...																		1	...
Deformity of foot	1	...	1	...	1	...																		1	...
" of toe	1	...	1	...	1	...																		1	...
Coxa vara	4	4	...	1	...	3	...											1	...	1	...	1	2	...	
MALFORMATIONS.																									
Single harelip	3	2	1	3	...													2	1	...					
Do. and cleft palate	8	6	2	8	...													3	4	1	...				
Double harelip and cleft	4	4	...	4	...													1	2	1	...				
palate																									
Cleft palate	15	6	9	13	...	2	...																1	14	...
Branchial fistula	1	...	1	1	...																			1	...
Congenital hip	3	1	2	...	1	2	...																3	...	
Spina bifida	4	4	...	3	1	...											2	...	1	...	1	...	1	...	
Imperforate rectum	2	1	1	2	...												2	...							
" anus	1	1	...	1	...												1	...							
Recto-vaginal fistula	1	...	1	1	...																		1	...	
Sacro-coccygeal tumour	1	...	1	1	...												1	...							
Webbed fingers	1	...	1	1	...																			1	...
MEDICAL.																									
Pneumonia	2	2	...	1	...												2	...							
Phthisis	1	1	...														1	...							
Chronic mediastinitis	1	...	1	1	...																				
Dyspepsia	1	...	1	1	...												1	...							
Dilated stomach	2	2	...														2	...						2	...
Enteritis	1	1	...														1	1	...						
Constipation	2	2	...														1	...						1	1
Mucous colitis	1	...	1	1	...																			1	...
Cirrhosis of liver	1	1	...														1	...						1	...
Chorea	1	1	...																					1	...
Epilepsy	1	1	...																					1	...
Cerebral haemorrhage	1	1	...														1	...							
Scarlet fever	1	...	1	1	...												1	...							
Diabetes	1	...	1	1	...												1	...						1	...
Suppurative peritonitis	1	...	1	1	...												1	...							
Trivial	74	40	34	5	9	19	13	9	15	2	2	10	7	6	7	8	4	6	26						
Unclassified	12	7	5	3	2	1	4	1	1	1	1	1	1	3	1	2	...	2	3	1	2	...	2	3	
Total	2686	1622	1664	5	9	19	13	9	15	2	2	10	7	6	7	8	4	6	26						

according to authorised *Nomenclature*—continued.

Duration of residence.										Result.				Remarks.
Dys.	Dys.	Wks	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.		
1-4	5-13	2-4	1-2	2	4	4-6	6-9	9	12	+12				
...	1	...	...	...	...	...	...	...	1	...	...	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...	...
...	...	3	1	...	...	...	...	...	4	...	...	...	...
1	2	...	...	...	...	...	...	...	3	...	...	...	...
1	3	4	...	...	...	...	...	...	2	3	3	...	Readmission 1.	
...	...	3	1	...	...	...	...	...	1	2	1	...	Readmission 2.	
...	4	7	4	...	...	...	...	...	3	7	5	...	Readmission 2. Adenoids 1.	
...	...	1	...	...	...	...	...	...	1	...	...	...	Median.	
...	...	1	2	...	...	...	...	...	3	...	...	...	Readmission 1.	
...	1	2	1	...	...	...	...	...	1	3	...	...	Excised 1. Meningocele 2, meningo-myelocele 2, lumbo-sacral 4, paralysis of legs 1.	
2	...	...	...	...	...	...	...	...	2	...	...	...	Colotomy 2.	
...	1	...	...	...	...	...	...	...	1	...	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...	Unconnected with rectum or spinal canal.	
...	...	1	...	...	...	...	...	...	1	...	...	...
2	...	...	...	...	...	...	...	...	2	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...	Transferred to Medical.	
...	1	...	...	...	...	...	...	...	1	...	...	...
...	1	1	...	...	...	...	...	...	2	...	...	...	Same case.	
...	1	...	...	...	...	...	...	...	1	...	...	...
...	2	...	...	...	...	...	...	...	2	...	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...	Transferred to Medical.	
...	1	...	...	...	...	...	...	...	1	...	...	...	Transferred to Medical.	
...	1	...	...	...	...	...	...	...	1	...	...	...	Transferred to Medical.	
...	1	...	...	...	...	...	...	...	1	...	...	...
1	...	...	...	...	...	...	...	...	1	...	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...	Transferred to Isolation Hospital.	
...	1	...	...	...	...	...	...	...	1	...	...	...	Vulvitis.	
1	...	...	...	...	...	...	...	...	1	...	...	...	No cause found at P.M.	
33	26	12	3	...	...	...	...	...	52	5	17	...	For fitting of instruments 4.	
2	3	1	5	1	...	...	...	...	3	6	2	1	Fatal: scurvy rickets.	
									1683	708	157	136		

TABLE II.—*Abstract, showing Injuries, &c., in*

INJURIES.	Total.	Sex.		Age.								Duration before admission.					
		M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Hrs. 1-6	Hrs. 7-12	Hrs. 13- 24	Dys. 1-3	Dys. 3-6	Dys. +6
GENERAL INJURIES.																	
Burns	45	20	25	17	6	8	4	4	5	1	...	41	...	...	2	...	2
Scalds	30	21	9	25	3	1	...	...	...	1	...	27	...	...	3	...	3
LOCAL INJURIES.																	
Wounds and contusions of scalp	33	24	9	3	2	2	5	7	3	7	4	32	...	...	...	...	1
Wounds and contusions of face	12	11	1	...	...	3	1	5	1	1	1	11	...	...	1	...	1
Bullet in face	1	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...
Ruptured eyeball	1	1	...	...	...	...	...	...	...	1	...	1	...	1	...	...	...
Concussion	71	57	14	11	10	15	9	12	8	2	4	70	...	...	...	...	1
<i>Fractures of vault of skull—</i>																	
Simple	1	1	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
Compound	1	...	1	...	...	...	...	...	...	1	...	1	...	1	...	...	...
„ depressed	9	9	...	1	1	2	2	...	1	1	1	9	...	...	...	...	...
<i>Fractures of base</i>																	
Compound fracture of basi-sphenoid	1	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
<i>Fractures of base and vertex—</i>																	
Simple	2	2	...	...	...	...	...	...	...	1	1	2	...	...	...	...	...
<i>Fractures of face bones—</i>																	
Superior and inferior maxillæ	2	2	...	...	1	...	...	1	...	...	...	2	...	...	...	...	...
Inferior maxilla	4	3	1	...	...	2	...	...	1	1	...	4	...	...	...	...	...
Nasal bones	2	2	...	...	1	...	...	1	...	1	...	2	...	...	...	...	...
Orbit	2	2	...	1	...	...	...	1	...	...	...	2	...	...	...	...	...
<i>Injuries of neck—</i>																	
Cut throat	7	7	...	...	...	...	...	2	...	2	3	7	...	...	...	...	...
Abrasions of neck	1	1	...	...	...	1	...	...	...	...	...	1	...	...	1	...	...
Bullet wound of neck	1	1	...	...	1	...	...	...	...	...	...	1	...	...	1	...	...
Foreign bodies in œsophagus	5	1	4	2	1	...	...	1	...	1	...	3	1	...	...	...	1
<i>Injuries of thorax—</i>																	
Contusions	8	3	5	1	1	1	3	1	...	1	7	...	...	...	...	...	...
Bullet in lung	1	1	...	...	1	...	...	1	...	1	1	...	...	1	...	...	...

Classes, according to authorised Nomenclature.

Duration of residence.										Result.			Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.	
15	6	6	15	3	...	...	...	...	30	...	...	15	Radical cure for inguinal hernia 1.
10	8	6	4	2	...	...	...	...	18	...	...	12	
15	18	...	...	...	...	...	...	...	33	...	...	...	Concussion 1; delirium tremens 1; epilepsy 1.
4	6	2	...	...	...	...	...	...	12	...	...	...	Delirium tremens 1.
...	1	...	...	...	...	...	...	...	1	...	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...
29	33	7	1	1	...	...	...	...	69	2	...	...	Cerebral hæmorrhage 1; laceration of brain 1; Colles's fracture 1; fractured humerus 1; fractured clavicle 1; scalp wound 14.
1	...	...	...	...	...	...	...	...	...	...	...	1	Ruptured middle meningeal artery.
...	1	...	...	...	...	...	...	...	1	...	...	...
2	4	3	...	...	...	...	...	...	7	...	...	2	
6	9	5	...	...	...	...	...	...	13	...	...	7	Extra-dural hæmorrhage 2; fractured ribs and laceration of kidney 1.
1	...	...	...	...	...	...	...	...	...	...	...	1	Pistol wound; suicidal.
2	...	...	...	...	...	...	...	...	...	...	...	2	Extra-dural hæmorrhage 2.
...	...	1	1	...	...	...	...	...	2	...	...	...	Fractured ribs, empyema 1.
1	1	2	...	...	...	...	...	...	3	...	...	1	Fatal: œdema of larynx, under anæsthetic.
...	1	1	...	...	...	...	...	...	2	...	...	...	Superior maxilla 1.
2	...	...	...	...	...	...	...	...	...	...	...	2	Laceration of temporo-sphenoidal lobe 1, frontal lobe 1.
3	4	...	...	...	...	...	...	...	4	...	...	3	Suicidal 7.
1	...	...	...	...	...	...	...	...	1	...	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...
1	2	2	...	...	...	...	...	...	3	...	...	2	Tooth-plate 2, halfpenny 2, farthing 1. Esophagotomy 2. Septicæmia 1, <i>vide</i> Special Table III.
2	5	...	1	...	...	...	...	...	8	...	...	...	Hysteria 1.
...	...	...	1	...	...	...	...	...	1	...	...	...	Suicidal; empyema.

TABLE II.—*Abstract, showing Injuries, &c., in*

INJURIES.	Sex.		Age.								Duration before admission.							
	Total.		M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Hrs. 1-6	Hrs. 7-12	Hrs. 13- 24	Dys. 1-3	Dys. 3-6	Dys. 6-12
LOCAL INJURIES—cont.																		
<i>Injuries of thorax—continued.</i>																		
Fractured ribs	26	25	1	...	1	1	3	8	5	4	4	25	1	...	...	...	...	...
<i>Injuries of spine—</i>																		
Sprains and contusions	15	14	1	...	...	1	7	2	4	...	1	15	...	...	...	...	...	...
Wound	1	...	1	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...
? Injury of cord	2	2	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	2
Fracture	2	2	...	...	...	...	1	1	...	...	1	...	1	...	1	...	1	...
Fracture dislocation	1	1	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...
<i>Injuries of abdomen—</i>																		
Contusion	22	19	3	3	3	7	3	4	1	1	...	22	...	...	...	...	...	...
Hæmorrhage into peritoneum	1	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...
Bullet wound	1	...	1	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...
Ruptured kidney	5	5	...	1	...	2	1	...	...	1	...	5	...	...	...	...	...	...
Ruptured liver	6	2	4	...	3	...	1	...	2	...	...	6	...	...	...	...	...	...
Ruptured duodenum	1	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...
Ruptured jejunum	1	...	1	...	...	1	...	...	...	...	...	1	...	...	1	...	...	...
Foreign body in bladder	3	...	3	...	...	1	1	...	1	...	...	...	...	...	1	...	2	...
<i>Injuries of external genitalia—</i>																		
Ruptured urethra	5	5	...	...	...	2	...	2	...	...	1	5	...	...	...	...	...	...
Wound of vulva	2	...	2	...	1	...	1	...	...	...	...	2	...	...	...	...	...	...
Laceration of vagina	1	...	1	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...
<i>Injuries of pelvis—</i>																		
Contusion	1	1	...	...	...	...	...	1	...	...	1	...	1	...	1	...	...	1
Fractured pelvis	5	4	1	...	...	...	...	3	1	1	4	...	...	...	...	...	...	1
<i>Injuries of upper extremity—</i>																		
Contusions	4	3	1	...	1	...	...	1	...	...	2	3	...	...	1	...	...	1
Wounds of arm	1	1	...	...	...	1	...	...	...	...	...	1	...	...	1	...	...	...
Wounds of forearm	1	2	2	...	1	...	1	1	1	1	...	1	3	...	1	...	1	...
Wounds of hand	3	1	2	1	...	2	...	...	...	...	...	3	...	...	3	...	...	...
Cut tendons	8	6	2	...	...	3	5	...	...	...	...	6	...	...	6	...	...	2
Foreign body	8	3	5	...	...	3	1	2	2	...	...	2	...	...	1	...	1	5

Classes, according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.		
3	10	11	2	...	...	...	...	23	...	...	3	Emphysema 4, pneumothorax 2, pleurisy 3; fractured clavicle 1; fractured humerus 1; fractured spine of scapula 1. See also "Ruptured liver and kidney."	
7	7	1	...	...	...	...	...	15	...	...	...	...	Same case.
...	1	...	...	...	...	...	...	1	...	...	...	...	Cervical 1, dorsal 1; fractured ribs 1.
...	1	1	...	...	...	...	...	2	...	...	...	...	Lumbar; laminectomy.
1	...	1	...	...	...	...	...	...	...	...	2	...	...
...	...	...	1	...	...	...	...	1	...	...	...	...	...
9	12	1	...	...	...	...	...	22	...	...	...	...	Enteritis 1, haematuria 3.
...	...	...	1	...	...	...	...	1	...	...	...	...	? source; subdiaphragmatic abscess.
...	...	1	...	...	...	...	...	1	...	...	...	...	Bullet not found; skiagram negative; haematuria.
5	...	...	...	...	...	...	...	...	...	...	5	...	Compound fracture of humerus and compound comminuted fracture of radius and ulna 1; fractured ribs and ruptured liver 1.
5	...	1	...	...	...	...	...	1	...	...	5	...	Ruptured spleen 1; ruptured kidney 1; fractured ribs 1; cirrhosis of liver 1.
1	...	...	...	...	...	...	...	...	...	...	1	...	...
...	...	1	...	...	...	...	...	1	...	...	...	...	Readmitted 3 months later with obstruction by band.
2	1	...	...	...	...	...	...	3	...	...	...	...	...
...	...	4	1	...	...	...	...	5	...	...	...	...	...
...	1	1	...	...	...	...	...	2	...	...	...	...	...
1	...	...	...	...	...	...	...	1	...	...	...	...	...
1	...	...	...	...	...	...	...	1	...	...	...	...	...
1	1	2	...	...	...	...	...	4	...	...	...	...	...
...	...	1	...	...	...	...	...	1	...	...	...	...	...
1	...	2	1	...	...	...	...	4	...	...	...	...	Wound of radial artery 1.
...	1	2	...	...	...	...	...	3	...	...	...	...	...
3	4	1	...	...	...	...	...	8	...	...	...	...	Cut ulnar nerve 1.
2	5	1	...	...	...	...	...	7	...	1	...	...	...

TABLE II.—*Abstract, showing Injuries, &c., in*

INJURIES.	Total	Sex.		Age.								Duration before admission.					
		M.	F.	Age.								Duration before admission.					
				-5	-10	-20	-30	-40	-50	-60	+60	Hrs.	Hrs.	13-	Dys.	Dys.	Dys.
LOCAL INJURIES—cont.												1-6	7-12	13- 24	Dys.	Dys.	Dys.
<i>Injuries of upper extremity</i>																	
—continued.																	
Divided median nerve	5	5	...	...	...	...	2	2	...	1	...	1	...	...	...	...	4
" radial nerve	1	...	1	...	...	1	...	...	...	...	...	1	...	...	...	...	...
" ulnar nerve	6	4	2	...	1	1	1	1	1	1	1	4	...	...	...	...	2
Injury to brachial plexus	3	3	...	...	...	...	...	3	...	...	...	...	...	...	...	...	3
" to spinal accessory	1	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	1
" to cervical plexus	1	1	...	...	...	...	...	...	...	1	...	1	...	...	...	...	1
Dislocation of humerus	5	3	2	...	...	...	1	1	...	2	1	5	...	...	...	...	...
Dislocation of radius and ulna	4	4	...	...	...	2	...	1	1	...	...	2	...	1	...	...	1
" of phalanges	2	2	...	...	2	...	...	...	...	...	...	1	...	1	...	...	...
Fractures—																	
Clavicle	6	6	...	...	...	2	...	3	...	1	...	4	...	1	...	1	1
Scapula	1	1	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
Humerus	7	5	2	...	2	1	...	...	1	2	1	6	...	...	...	...	1
Do., comp. comminuted	2	2	...	...	...	1	1	...	...	...	...	2	...	...	...	...	...
Olecranon	4	3	1	...	...	1	1	1	...	...	1	2	...	...	...	...	2
Radius	1	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
Ulna	2	...	2	...	...	...	...	2	...	...	...	...	...	...	...	...	1
Metacarpal, compound	6	5	1	...	1	1	1	1	1	...	1	6	...	...	...	...	...
Phalanges, compound	3	3	...	...	...	1	1	...	1	...	...	3	...	...	...	...	...
<i>Injuries of lower extremity—</i>																	
Contusions	15	9	6	1	2	2	4	2	...	1	3	14	...	...	...	...	1
Wounds of thigh	5	4	1	...	1	1	1	1	...	1	...	4	...	...	...	...	1
" of leg	2	1	1	...	...	...	1	1	...	...	...	2	...	...	...	...	1
" of foot	1	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
Laceration of tendon	1	1	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...
Achillis																	
Foreign body	11	5	6	1	3	1	4	1	...	1	...	7	...	...	1	...	3
Divided anterior tibial nerve	1	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1
Traumatic synovitis—																	
Knee	5	5	...	...	...	1	2	1	...	1	...	3	1	...	...	...	1
Penetrating wounds of knee	5	4	1	1	1	2	...	1	...	...	...	3	...	...	2	...	...
Dislocations—																	
Hip	1	1	...	...	...	...	1	...	...	1	...	1	...	...	...	...	...
Knee	1	1	...	...	...	...	...	1	...	1	...	1	...	...	...	...	...

Classes, according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
ys.	Dys.	Wks	Mts.	C.	R.	U.	D.							
1-4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	+	12					
1	2	2	...	...	...	...	...	...	...	2	2	1	...	Cut tendons 2.
1	...	...	...	...	...	...	...	...	...	1	...	...	...	Cut tendons.
3	3	...	...	...	...	...	...	5	1	...	...	...	...	Cut tendons 4.
...	1	2	...	...	...	...	...	...	...	3	...	...	...	Same case readmitted; previous fracture of clavicle.
1	...	...	...	...	...	...	...	...	...	1	...	...	...	Previous removal of glands of neck.
3	1	1	1	...	...	...	...	5	...	...	...	...	...	Subcoracoid 5; ruptured axillary artery 1; fractured fibula 1.
1	2	1	...	...	...	...	...	3	1	...	...	...	...	Backwards 2, outwards 2; compound 2; fracture of internal condyle 1.
1	1	1	...	...	...	...	...	2	...	...	...	...	...	Metacarpo-phalangeal 1.
3	3	...	...	...	...	...	...	5	1	...	...	...	...	Readmitted 1; fractured sternum 1; comminuted 2.
1	...	...	...	...	...	...	...	1	...	...	...	...	...	Fracture through spine.
1	5	1	...	...	...	...	...	7	...	...	...	...	...
1	1	...	...	...	...	...	...	1	...	...	1	...	...	Fatal: fractured ribs, injury to lungs, compound comminuted fracture of tibia and fibula.
1	1	2	...	...	...	...	...	4	...	...	...	...	...
1	...	...	...	...	...	...	...	1	...	...	...	...	...
1	1	1	...	...	...	...	...	2	...	...	...	...	...	Same case.
1	1	3	1	...	...	...	...	6	...	...	...	...	...	Cut tendons and fractured phalanx 1; 1st 1, 2nd 1, 4th and 5th 2, all 2.
1	...	2	...	...	...	...	...	3	...	...	...	...	...
7	5	3	...	...	...	...	...	15	...	...	...	...	...
...	5	...	...	...	...	...	...	5	...	...	...	...	...
...	1	1	...	...	...	...	...	2	...	...	...	...	...
...	1	...	...	...	...	...	...	1	...	...	...	...	...
...	1	...	...	...	...	...	...	1	...	...	...	...	...
1	4	4	2	...	...	...	...	7	...	4	...	...	...
...	...	1	...	...	...	...	...	1	...	...	...	...	...
1	3	1	...	...	...	...	...	5	...	...	...	...	...	Ruptured internal lateral ligament 2.
1	1	1	2	...	...	...	...	5	...	...	...	...	...	Septic arthritis 5.
1	1	...	...	...	...	...	...	1	...	...	...	...	...	Sciatic.
1	...	...	...	...	...	...	...	1	...	...	...	...	...	Transferred to Home.

TABLE II.—Abstract, showing Injuries, &c., in

Classes, according to authorised Nomenclature—continued.

Duration of residence.								Result.				Remarks.
Dys.	Dys.	Wks	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.	
1-4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	+12				
1	..	..	..	..	..	1	..	..	..	..	..	Outwards; rupture of quadriceps.
1	..	..	..	..	..	1	..	..	..	..	..	No fracture of tibia or fibula. Dislocation forwards and outwards.
1	..	..	..	..	..	1	..	..	..	..	..	Upwards without fracture of tibia or fibula.
4	20	23	8	..	..	53	2	..	..	..	..	Fracture into knee-joint 1; fracture of tibia and fibula 1; fractured tibia 1; fractured fibula 2; fractured humerus 1; subcoracoid dislocation of humerus 1.
1	..	..	1	2	..	..	3	..	..	..	..	Varicocele 1; comminuted fracture of tibia and fibula 1.
1	1	..	..	..	..	..	..	2	..	..	..	Compound comminuted fracture of tibia and fibula 1; comminuted fracture of lower jaw 1.
1	2	2	5	1	..	..	6	5	..	..	..
2	1	5	7	1	2	..	13	4	..	1	..	Fatal: septicæmia, see Special Table III. Stellar 1; compound 1.
21	52	12	4	1	..	..	86	4	..	..	..	Reducible inguinal hernia 1; fractured ribs 1.
..	..	2	..	..	..	..	2	..	..	..	..	Delirium tremens 1.
1	3	3	3	..	..	..	9	..	..	1	..	Fatal: compound fracture of tibia and fibula of both legs and of femur of left.
1	..	2	..	1	..	..	2	..	..	2	..	Fatal: pneumonia 1, delirium tremens 1.
9	6	2	1	..	..	..	18	..	..	..	..
..	..	1	..	..	..	..	1	..	..	..	..
4	10	..	1	..	..	..	15	..	..	..	..	Wound of leg 1.
..	..	1	..	..	..	..	1	..	..	..	..	2nd, 3rd, and 4th.
..	..	..	1	..	..	..	1	..	..	..	..	Gangrene of terminal phalanx.
..	..	..	1	..	..	..	1	..	..	..	..
..	..	..	1	..	..	..	1	..	..	..	..
..	2	2	1	1	2	..	7	1	..	..	..	Erysipelas 1. See Special Table II.
1	..	..	..	..	..	..	1	..	..	..	..
								630	36	6	72	
								1683	708	157	188	
								2313	744	163	210	
												3430

TABLE III.—

SURGICAL OPERATIONS.	Total.	Sex.		Age.								
		M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	
REMOVAL OF TUMOURS AND NEW GROWTHS.												
Amputation of breast	6	...	6	1	1	2	2	
,, ,, and clearance of axilla	47	..	47	2	6	17	14	8		
,, ,, clearance of axilla and supra-clavicular glands	2	...	2	1	...	1	...		
Axillary glands : : : : .	2	...	2	2	...	
Cervical glands : : : : .	3	2	1	1	1	1	...		
Recurrent scirrhous of breast	6	...	6	1	1	2	1	1		
Carcinoma of nose	1	...	1	1	
,, of antrum	1	...	1	1	...		
,, of thyroid	1	...	1	...	...	...	...	1	...
,, of rectum	10	4	6	2	2	2	2	2		
,, of cæcum	2	1	1	...	...	1	1	...	...	
,, of descending colon	2	...	2	1	1	...		
,, of sigmoid flexure	1	...	1	...	...	...	...	1	...
,, of pylorus	1	1	1	...		
,, of kidney	1	...	1	...	...	...	...	1	...
Epithelioma of tongue	13	10	3	...	...	2	4	4	3	
,, ,, recurrent	2	2	...	...	...	...	...	1	1
,, of floor of mouth	6	4	2	...	...	1	...	...	2
,, of lip	10	9	1	...	...	...	...	2	1
,, of cheek	5	2	3	...	...	...	...	2	1
,, of alveolar border	3	2	1	...	...	1	...	1	...	
,, of scalp	1	...	1	...	...	...	...	1	...
,, of palate	5	3	2	...	...	...	...	3	2
,, of larynx	1	1	...	...	...	...	...	...	1
,, of hand	1	1	...	...	...	...	...	...	...
,, of scrotum	1	1	...	...	...	...	...	...	1
,, of penis	1	1	...	...	...	...	...	1	...
,, of bladder	2	1	1	...	...	...	...	1	1
,, of glands	6	6	4	...	...	...	...	3	2
Rodent ulcer	19	6	4	...	...	...	1	...	7

Surgical Operations.

Duration of residence after operation.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.		
...	5	1	...	...	...	...	...	6	...	...	...	...	Chronic interstitial mastitis 5; multiple cysts of breast 1.
...	17	24	6	...	...	...	...	44	3	...	...	...	Scirrhous 39; duct carcinoma 2; chronic mastitis 4; cystic fibro-adenoma 1; adeno-sarcoma 1.
...	2	...	...	...	...	...	...	2	...	...	...	...	Scirrhous 2.
...	1	1	...	...	...	...	...	2	...	...	...	...	Previous scirrhous carcinoma of breast.
...	2	1	...	...	...	...	...	3	...	...	...	...	Previous scirrhous 1; carcinoma of cheek 1. Oöphorectomy 1.
...	2	2	...	2	...	...	...	2	4	...	...	...	Previous scirrhous 5; colloid carcinoma 1. Amputation of shoulder 1; oöphorectomy 1.
...	1	...	...	...	...	...	...	1	...	...	...	...	Recurrent.
...	1	...	...	...	...	...	...	1	...	...	...	...	Excision of upper jaw.
2	...	1	5	2	...	...	...	6	2	...	...	2	Kraske's method 3; perineal 7.
...	1	1	...	...	...	...	...	2	...	...	...	...	Resection and artificial anus, afterwards lateral anastomosis 1; resection and anastomosis of end of ileum into side of ascending colon 1.
...	1	...	1	...	...	...	...	1	...	...	1	...	Resection and artificial anus, afterwards lateral anastomosis and colotomy closed 1; lateral anastomosis followed by resection and closure of both ends 1.
...	...	1	...	...	...	...	...	1	...	...	...	...	Previous colotomy.
...	...	1	...	...	...	...	...	1	...	...	...	...	Duodenum anastomosed to posterior surface of stomach and pyloric end closed.
...	...	...	...	1	...	...	...	...	...	1	...	...	Exploration only.
...	1	7	5	...	...	...	...	9	3	...	1	...	Laryngotomy 1; Kocher 1. Fatal: septic broncho-pneumonia.
...	1	1	...	...	...	...	...	1	1	...	...	...	Recurrent 2.
...	2	3	1	...	...	...	...	2	3	...	1	...	Recurrent 4; upper lip 1; lower lip 9.
...	9	1	...	...	...	...	...	9	1	...	...	...	Recurrent 1.
...	2	2	1	...	...	...	...	2	3	...	...	...	Upper jaw 1; lower jaw 2.
...	1	2	...	...	...	...	...	1	2	...	...	...	Recurrent 2.
...	3	1	1	...	...	...	...	1	4	...	...	...	Tracheotomy. Glands surrounded common carotid, which was ligatured.
1	...	...	...	...	...	...	...	1	...	...	...	...	Glands too advanced for removal.
...	1	...	...	...	...	...	...	1	...	...	...	...	Excision of glands.
...	1	1	...	...	...	...	...	1	...	...	...	...	Supra-pubic route.
1	3	2	...	...	...	...	...	6	...	...	...	...	Neck 4; groin 2; secondary in all.
6	3	1	...	...	...	...	...	6	4	...	...	...	Recurrent 5. Thiersch grafts 2. Erysipelas 1; diphtheria 1.

TABLE III.—*Surgical*

SURGICAL OPERATIONS.	Total	Sex.		Age.							
		M.	F.	-5	-10	-20	-30	-40	-50	-60	+60
REMOVAL OF TUMOURS AND NEW GROWTHS—continued.											
Sarcoma of naso-pharynx	4	4	...	...	...	4	...	...	...	...	...
“ of cheek	2	2	...	...	...	2	...	...	...	...	...
“ of upper jaw	2	1	1	...	...	...	1	...	...	...	1
“ of neck	1	1	...	...	...	...	1	...	...	...	...
“ of scapula	1	1	...	...	...	...	1	...	...	...	...
“ of kidney	1	1	...	...	...	...	...	...	...	...	1
“ of undescended testis	1	1	...	...	...	...	...	1	...	...	...
“ of ovary	1	1	...	...	...	...	1	...	...	...	...
“ of finger	1	1	...	...	...	...	...	...	1	...	...
“ of hip	1	1	...	...	...	1	...	...	...	...	...
“ of femur	3	3	...	...	...	1	...	...	...	2	...
“ of tibia	3	1	2	...	...	...	2	...	...	...	1
Lipoma	16	8	8	1	...	...	5	5	1	3	1
Polypi	11	5	6	...	...	4	2	3	...	1	1
Fibroma	10	4	6	...	...	1	4	2	1	1	1
Exostosis	8	3	5	...	...	3	4	1	...	...	...
Osteoma	1	1	...	...	...	...	1	...	...	...	...
Adenoma	8	8	...	...	...	1	2	2	3	...	...
Fibro-adenoma	17	17	...	...	...	2	9	3	3	...	...
Adeno-myxoma	1	1	...	...	...	...	...	...	...	...	1
Chondro-adenoma	1	1	...	...	...	...	1	...	...	...	...
Calcifying “adenoma”	1	1	...	...	...	...	...	...	...	...	1
Papilloma	6	5	1	1	...	1	1	...	...	...	1
Nævus, excision	2	2	2	2	...	...	...	...	...	...	...
“ electrolysis	3	1	2	3	...	...	...	...	...	...	...
Neuroma	2	2	...	...	...	...	1	1	...	...	...
Fibro-myoma	1	1	...	...	...	...	...	1	...	...	...
Adenoids	20	8	12	4	2	11	3	...	...	...	...
Cysts—											
Dermoid	2	1	1	...	...	1	1	...	...	...	...
Thyro-lingual	1	1	...	...	...	1	...	...	...	...	...
Ranula	2	1	1	...	1	1	...	...	...	...	...
Appendicular	1	2	2	...	...	1	3	...	...	...	...
Branchial	1	1	...	...	1	...	...	...	...	...	...
Hydatid	2	1	1	...	...	1	1	1	1	...	...

Operations—continued.

Duration of residence after operation.											Result.				Remarks.
Dys.	Dys.	Wks	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.			
1-4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	+12							
1	1	1	1	1	1	1	1	1	4	...	...	...	...	Tracheotomy 1; glands of neck excised 1. Recurrent 2.	
1	1	...	...	...	...	...	...	...	2	...	...	...	...	Same case recurrent; round-celled.	
1	1	...	...	...	...	...	...	...	2	...	...	...	...	Myeloid 2. Excision of upper jaw in both cases.	
...	1	...	...	...	...	...	...	...	1	...	...	...	...	Lympho-sarcoma.	
...	1	...	...	...	...	...	...	...	1	...	...	...	...	Spindle-celled.	
1	...	...	...	...	...	...	...	...	1	...	...	...	...	Nephrectomy. Other kidney represented by fibrous sac.	
...	...	1	...	...	...	...	...	...	1	...	...	...	...	Round-celled.	
...	...	1	...	...	...	...	...	...	1	...	...	...	...	Round-celled.	
...	1	...	...	...	...	...	...	...	1	...	...	...	...	Fibro-sarcoma.	
...	...	...	1	...	...	...	...	...	1	...	...	...	...	Partially removed.	
...	...	1	2	...	...	...	...	...	2	1	...	...	...	Endosteal 2; periosteal 1. Amputation of thigh 3; ablation of femur 1.	
...	...	...	3	...	...	...	...	...	2	1	...	...	...	Parosteal 1; periosteal 2; spindle-celled 2; chondrifying 1. Amputation of thigh in all.	
1	12	3	...	...	...	...	...	...	16	...	...	...	...
8	3	...	...	...	...	...	...	...	11	...	...	...	...	Nasal 9; pharyngeal 1; rectal 1.	
6	3	...	1	...	...	...	...	...	10	...	...	...	...	Upper jaw 4; lower jaw 2; shoulder 2; arm 1; buttock 1.	
6	2	...	...	...	...	...	...	...	8	...	...	...	...	Subungual 4; radius 1; femur 1; metatarsus 1; septum nasi 1.	
...	...	...	1	...	...	...	...	...	1	...	...	...	...	Secondary haemorrhage; ligature of brachial.	
1	6	1	...	...	...	...	...	...	8	...	...	...	...	Breast 6; cystic 2. Parotid 2.	
...	14	3	...	...	...	...	...	...	17	...	...	...	...	Cystic 3. Breast 17. Fistula in ano slit up 1.	
1	...	...	...	...	...	...	...	...	1	...	...	...	...	Parotid.	
1	...	...	...	...	...	...	...	...	1	...	...	...	...	Submaxillary gland.	
...	...	1	...	...	...	...	...	...	1	...	...	...	...	Back.	
1	2	2	1	...	...	...	...	...	6	...	...	...	...	Larynx 1; tongue 2; bladder 1; penis 1; anus 1. Adenoids removed 1.	
1	1	1	...	...	...	...	...	...	2	...	...	...	...
...	2	1	...	...	...	...	...	...	2	...	1	...	...	Fatal: congenital syphilis.	
1	1	...	...	...	...	...	...	...	1	1	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...	...	Abdominal hysterectomy.	
13	7	...	...	...	...	...	...	...	20	...	...	...	...	Tonsils 5. Hypertrophic rhinitis, turbinection 3. Deflected septum 2.	
1	1	...	...	...	...	...	...	...	2	...	...	...	...	Orbit 1; neck 1.	
...	1	...	...	...	...	...	...	...	1	...	...	...	...
1	...	1	...	...	...	...	...	...	2	...	...	...	...
2	1	1	...	...	...	...	...	...	4	...	...	...	...	Partial excision of jaw 3; extraction of tooth 1.	
...	...	1	...	...	...	...	...	...	1	...	...	...	...	Suppurating. Incision and scraping.	
...	...	1	1	...	...	...	...	...	1	1	...	...	...	Liver 1; thigh 1. Incision and drainage 2.	

TABLE III.—*Surgical*

SURGICAL OPERATIONS.	Total.	Sex.		Age.							
		M.	F.	-5	-10	-20	-30	-40	-50	-60	+60
REMOVAL OF TUMOURS AND NEW GROWTHS—continued.											
Cysts—cont.											
Sebaceous	.	5	2	3	...	...	1	2	2	...	...
Neck	.	2	1	1	...	1	...	1	...	...	...
Nose	.	1	...	1	...	...	...	1	...	...	...
Axilla	.	1	...	1	...	1	...	...	...	...	...
Breast	.	2	...	2	...	...	...	...	1	1	...
Inguinal canal	.	1	1	...	...	...	...	...	...	...	...
Canal of Nuck	.	2	...	2	...	...	...	2	...	...	...
Blood-cyst	.	1	...	1	...	...	...	1	...	...	1
Bartholin's	.	1	...	1	...	...	...	1	...	...	...
Abdominal	.	1	1	...	...	...	...	...	1	...	...
Ovarian	.	6	...	6	...	...	...	...	2	3	1
Parovarian	.	1	...	1	...	...	...	...	1	...	...
DIGESTIVE SYSTEM.											
(Esophagotomy	.	2	...	2	...	...	...	...	1	...	1
Herniotomy—											
Inguinal	.	1	1	...	...	...	...	...	...	...	...
Femoral	.	2	...	2	...	...	...	...	1	...	1
Umbilical	.	2	...	2	...	...	...	...	...	...	2
Ventral	.	1	...	1	...	...	...	...	...	...	1
Herniotomy and faecal fistula	.	3	1	2	...	...	...	...	...	2	1
Herniotomy and resection of intestine	.	1	...	1	...	...	...	...	...	1	...
Herniotomy, faecal fistula, and lateral anastomosis	.	1	...	1	...	...	...	...	...	...	1
Herniotomy and radical cure—											
Inguinal	.	14	14	...	...	1	2	4	3	2	2
Femoral	.	16	4	12	...	...	...	1	4	3	8
Umbilical	.	9	1	8	...	...	...	...	3	3	3
Ventral	.	2	..	2	...	...	...	...	1	...	1
Radical cure—											
Inguinal	.	172	160	12	7	11	48	63	26	10	3
Femoral	.	17	4	13	...	...	1	4	5	3	1
Umbilical	.	3	...	3	...	...	...	...	2	1	...
Ventral	.	6	1	5	...	...	...	...	3	1	2
Lumbar	.	1	1	...	1	...	...	...	...	...	...

Operations—continued.

Duration of residence after operation.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.		
4	1	...	...	...	...	...	5	...	...	...	...	...	...
1	1	...	...	...	...	...	2	...	...	...	...	...	...
1	...	...	...	...	...	...	1	...	...	...	...	...	...
1	...	...	...	...	...	...	1	...	...	...	...	...	Pigmented mole excised.	
...	1	...	1	...	...	...	2	...	...	...	...	...	...
...	1	...	...	...	...	...	1	...	...	...	...	...	Cyst contained daughter cysts.	
...	1	1	...	...	...	...	2	...	...	...	...	...	...
...	...	1	...	...	...	...	1	...	...	...	...	...	Thigh.	
...	1	...	...	...	...	...	1	...	...	...	...	...	...
...	...	1	...	...	...	...	1	...	...	...	...	...	Localised cyst; incised and drained.	
...	...	4	2	...	...	...	6	...	...	...	...	...	Twisted pedicle 1; suppurating 1. Ovari- otomy in all.	
...	...	1	...	...	...	...	1	...	...	...	...	...	Twisted pedicle.	
1	...	1	...	...	...	...	...	...	...	...	...	...	...
1	...	1	...	...	...	...	...	...	...	...	...	...	2 Impacted tooth-plate in each case.	
...	...	1	...	...	...	...	1	...	...	...	...	...	...
...	1	1	...	...	...	...	2	...	...	...	...	...	...
1	...	1	...	...	...	...	1	...	...	...	...	...	1 Gut opened on the day after herniotomy 1.	
...	...	1	...	...	...	...	1	...	...	...	...	...	...
2	1	...	...	...	...	...	...	...	...	...	...	...	3 Umbilical 3. Gut gangrenous in all cases; Paul's tubes tied in. Resection of in- testine next day 1.	
...	...	1	...	...	...	...	1	...	...	...	...	...	3 inches excised, end to end anastomosis. Femoral.	
1	...	...	...	...	...	...	...	...	...	...	...	...	1 Femoral. Murphy's button used.	
...	3	11	...	...	...	...	14	...	...	...	...	...	...
2	3	9	2	...	...	...	14	...	...	2	...	...	...
1	...	6	1	1	...	...	8	...	...	1	...	...	...
1	...	1	...	...	...	...	1	...	...	1	...	...	...
...	38	121	10	3	...	...	172	...	...	...	...	...	Castration 2; excision of varicocele 6; ex- cision of hydrocele 1. Varicose veins 1; lipoma of back 1; adenoids 1. Circum- cision 2. Pneumonia 1; pyæmia 1, <i>vide</i> Special Table III.	
...	3	12	2	...	...	...	17	...	...	...	...	...	Removal of appendix 1.	
...	2	1	...	...	...	...	3	...	...	...	...	...	...
...	...	4	2	...	...	...	6	...	...	...	...	...	...
...	...	1	...	...	...	...	1	...	...	...	...	...	...

TABLE III.—*Surgical*

SURGICAL OPERATIONS.	Total.	Sex.		Age.							
		M.	F.	-5	-10	-20	-30	-40	-50	-60	+60
DIGESTIVE SYSTEM—continued.											
Incision of appendicitic abscess	28	18	10	1	4	8	6	6	3	...	...
General peritonitis from appendicitis	14	7	7	...	...	4	7	3	...	...	...
Removal of appendix	40	29	11	...	3	16	15	5	...	1	...
Intussusception	18	11	7	17	1	...	...	...	...	...	...
Suture of perforated gastric ulcer	1	...	1	...	...	1	...	...	...	...	...
" " duodenal ulcer	2	2	...	...	...	1	...	...	...	1	...
" " typhoid ulcer	4	2	2	...	...	2	2	...	...	...	...
" " small intestine	1	...	1	...	...	...	1	...	...	...	...
Matting of intestines	1	...	1	...	...	...	...	...	1	...	...
Strangulation by band	6	4	2	...	1	...	3	1	...	1	...
" " by Meckel's diverticulum	1	1	...	...	1	...	...	...	...	...	...
Tuberculous peritonitis	2	...	2	...	...	1	1	...	...	...	...
Faecal fistula	1	1	...	...	...	1	...	...	...	...	...
Cholecystotomy	2	1	1	...	...	...	1	1	...	...	...
Cholelithotomy	10	2	8	..	..	..	2	1	3	2	2
Cholecystocolostomy	1	1	...	...	...	...	...	1	...	...	...
Closure of artificial anus	2	1	1	...	...	...	...	...	2	...	...
Hepatic abscess	2	2	...	...	...	1	...	...	1	...	...
Subdiaphragmatic abscess	5	4	1	...	2	1	1	...	...	1	...
Suture of ruptured gut	1	...	1	...	...	...	1	...	...	...	...
Laparotomy for volvulus	2	1	1	...	...	...	2	...	...	...	...
Lateral anastomosis of gut	9	2	7	...	...	...	4	...	2	2	1

Operations—continued.

Duration of residence after operation.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.		
1 6	1 1	12 2	11 5	3 ...	1 ...	...	...	...	23 6	4 ...	...	1 8	Irrigation in all. Appendectomy 12. Empyema 1. Fatal: strangulation by band 10 days after operation 1; subdiaphragmatic abscess 1.
...	4 6	30 2	4 9	1 1	1 ...	...	...	...	40 9	...	...	...	Ileo-caecal 12; ileo-colic 1; small intestine 2; double 3. Cœliotomy and reduction 16; excision and lateral anastomosis 1; excision and Paul's tubes tied in 1. One case fatal from bronchitis and bronchiectasis, one month after operation.
...	...	1 ...	...	...	...	...	...	...	1 ...	...	...	...	Anterior surface. <i>Vide 'Lancet,' April 1st, 1900.</i>
1	...	1 ...	...	...	...	...	...	...	1 ...	...	...	1	Fatal: general peritonitis. <i>Vide 'Clinical Society's Transactions,' 1900.</i>
3	1 ...	...	...	...	...	...	1 ...	...	...	3	<i>Vide 'Lancet,' Oct. 14th, 1899.</i>	
1	1	Separation of adhesions. Previous ovariotomy.	
...	3	2 ...	1 ...	...	...	...	...	...	3 ...	...	...	3	Previous appendix abscess 3; hernia 1; ruptured jejunum 1; adhesions of omentum 1.
1	1	Gut gangrenous; excision, Paul's tubes. General peritonitis.	
...	...	2 ...	...	...	...	...	...	...	1 ...	1 ...	...	...	Tuberculous salpingitis 1.
...	...	1 ...	...	...	...	...	...	...	...	...	...	1	Previous appendicitis; general tuberculosis.
1	...	1 ...	...	...	...	...	...	...	1 ...	...	...	1	Fatal: general peritonitis. Assumed cholelithiasis 2.
...	...	3 ...	6 ...	1 ...	...	...	...	...	9 ...	...	...	1	Choledochotomy 2. Fatal: empyema of gall-bladder, hepatic abscess. Obstructive jaundice.
...	...	1 ...	...	...	...	...	...	...	1 ...	...	...	2	Pleural route 1.
...	...	1 ...	...	...	...	...	...	...	1 ...	...	...	...	Ruptured liver 1; abdominal injury 1; necrosis of rib 1; appendicitis 2. Perisplenic 2. Pleural route 3.
...	1 ...	...	...	...	...	...	1 ...	...	...	...	Later obstruction by adhesions, which were divided, with recovery.	
2	2	Small intestine 1; cæcum 1.	
...	...	5 ...	3 ...	1 ...	...	...	...	...	4 ...	4 ...	...	1	Ileum to transverse colon 5; transverse to descending colon 2; hepatic flexure to sigmoid 1; small to small 1. Carcinoma of cæcum 1, of ascending colon 2, of splenic flexure 2; matted intestines 1; faecal fistula 2; non-development of descending colon 1. Fatal: general peritonitis following removal of growth 23 days after anastomosis.

TABLE III.—*Surgical*

SURGICAL OPERATIONS.	Total.	Sex.		Age.							
		M.	F.	-5	-10	-20	-30	-40	-50	-60	+60
DIGESTIVE SYSTEM—continued.											
Gastro-jejunostomy	7	7	...	...	...	...	2	2	...	2	1
Cæliotomy (exploratory)	34	18	16	1	1	3	5	10	7	5	2
Gastrostomy	8	6	2	...	...	...	...	...	3	4	1
Enterotomy	1	1	...	...	...	...	...	...	...	...	1
Right inguinal colotomy	3	...	3	...	...	...	1	...	1	1	...
Median colotomy	3	...	3	...	...	...	1	...	1	...	1
Left inguinal colotomy	21	12	9	2	...	...	2	3	7	4	3
Fistula in ano	27	21	6	...	...	1	6	9	7	4	...
Hæmorrhoids, Whitehead	48	32	16	...	...	...	14	14	8	8	4
" partial Whitehead	6	3	3	...	...	...	2	1	3	...	...
" ligature and excision	5	2	3	...	...	...	1	1	1	1	1
Proctotomy	1	1	...	...	...	...	...	...	...	...	1
Excision of stricture of rectum	1	...	1	...	...	...	...	1	...	...	...
Prolapse of rectum	2	...	2	...	...	...	2	...	...	...	...
Fissure in ano	2	...	2	...	...	...	1	...	...	1	...
GENITO-URINARY SYSTEM—											
Circumcision	18	18	...	2	1	4	7	2	2	...	...
Vesico-vaginal fistula	3	...	3	...	...	...	...	1	2	...	...
Suture of urethra	5	5	...	...	...	2	...	2	...	...	1
Cock's perineal puncture	5	5	...	...	...	...	1	2	1	...	1
Internal urethrotomy	3	3	...	...	...	...	...	...	2	1	...
External urethrotomy	15	15	...	...	...	2	...	4	5	3	1
Incisions for extravasated urine	2	2	...	...	...	1	...	1	...	...	...
" for urethral abscess	2	2	...	...	...	...	...	1	1	...	...
Excision of urethral caruncle	1	...	1	...	...	...	...	...	1	...	...
Plastic of scrotum	1	1	...	1	...	...	...	...	...	...	...

operations—continued.

Duration of residence after operation.										Result.				Remarks.
ys.	Dys.	Wks.	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	+12	C.	R.	U.	D.	
-4	5	13	2-4	1-2	2-4	4-6	6-9	9-12	+12					
2	2	2	1	...	...	...	...	...	...	3	...	4	Carcinoma of pylorus in all. Continuous silk suture 4; Halsted 2; Allingham's bone bobbin 1.
8	3	13	8	1	1	8	2	11	13	Carcinoma of liver 1; stomach 1; pylorus 2; cæcum 1; colon 4; rectum 2; malignant, of ovary 1; sarcoma of pelvis 1; kidney 1; peritonitis 3; pelvic peritonitis 2; enteritis 2; ulcerative endocarditis 1; enlarged liver 1; dilated stomach 1; haemorrhage into peritoneum 1; obstruction from faecal concretion 1; laceration of kidney 1; abdominal injury 2; appendicitis 1; strangulation of bowel by fibroid of uterus 1; abdominal pain 1; retro-peritoneal cyst 1; subpleural hydatid 1.
...	...	7	1	...	...	...	...	...	...	6	...	2	Carcinoma of œsophagus 8. Albert's method 7, Howse 1.
1	...	...	...	...	...	...	...	...	...	...	...	1	Carcinoma of cæcum.
1	...	...	1	1	...	...	...	...	...	2	...	1	Carcinoma of colon 2; ulcerative colitis 1.
...	...	2	...	1	...	...	...	...	...	3	...	1	Carcinoma of colon 2; ulcerative colitis 1.
7	1	8	5	...	...	...	...	...	...	13	...	8	Carcinoma of sigmoid 2; rectum 12; stricture of rectum 2; intestinal adhesions 1; ulcerative colitis 1; ulceration of rectum 1; imperforate rectum 2.
1	17	9	...	...	...	...	...	...	...	26	1	...	Excised and sutured 7; slit up 20.
...	24	24	...	...	...	...	...	...	...	47	...	1	Fatal: septicæmia.
3	3	...	...	...	...	...	...	...	...	6	...	...
1	3	1	...	...	...	...	...	...	...	5	...	...	Varicose veins excised 1; fistula excised 1.
...	1	...	...	...	...	...	...	...	...	1	...	1	
1	...	...	...	...	...	...	...	...	...	2	...	...	Same cause. Excision and cauterisation 1; cauterisation 1.
1	1	...	...	...	...	...	...	...	...	2	...	...
6	9	2	1	...	...	...	...	...	...	18	...	...	Gonorrhœal warts cauterised 1.
...	...	2	1	1	1	...	1	Fatal: pyonephrosis.
...	...	4	1	5		Ruptured urethra 5.
...	...	3	1	1	3		2 Incisions for extravasation of urine 4.
1	1	8	4	i	13		2 Removal of urethral calculus 2. Fatal: extravasation of urine 2.
...	1	1	2		Phimosis 1; urethral calculus 1.
...	1	1	...	...	...	...	...	...	...	2	...	...
...	1	...	...	...	...	...	...	...	...	1	...	...
...	1	1		Adherent prepuce and scrotum.

TABLE III.—*Surgical*

SURGICAL OPERATIONS.	Total.	Sex.			Age.						
		M.	F.	-5	-10	-20	-30	-40	-50	-60	+6
GENITO-URINARY SYSTEM—continued.											
Supra-pubic puncture of bladder	3	3	...	...	...	...	...	1	...	1	1
" cystotomy	11	11	...	...	...	...	...	1	...	1	10
Prostatectomy	3	3	...	...	...	...	...	...	...	...	...
Vasectomy	5	5	...	...	...	...	2	...	...	...	...
Nephropexy	6	..	6	...	...	1	1	3	1	...	...
Lumbar nephrotomy	7	2	5	...	...	...	3	2	2	...	...
" nephrolithotomy	6	4	2	...	...	1	2	3	...	...	...
" nephrectomy	9	4	5	1	...	1	1	4	1	1	1
Abdominal nephrectomy	1	1	...	1	...	...	...	...	...	...	...
Removal of ureter	1	...	1	...	...	...	...	1	...	...	...
Supra-pubic lithotomy	8	8	...	1	1	...	1	1	2	2	2
Perinæal lithotomy	2	2	...	...	...	...	...	...	...	...	...
Litholapaxy	1	1	...	...	1	...	...	...	...	...	...
Extraction of urethral calculus	1	1	...	...	1	...	...	...	...	...	...
Extraction of vesical calculus through the female urethra	1	...	1	...	...	...	...	...	...	...	1
For undescended testis	14	14	...	...	...	10	4	...	...	...	...
Scraping tuberculous testis	1	1	...	...	...	...	1	...	...	...	...
Castration	6	6	...	...	...	...	5	1	...	...	...
Radical cure of hydrocele	15	15	...	...	...	6	5	3	1	...	...
Excision of hydrocele of cord	5	5	...	1	2	1	...	...	...	...	1
" of canal of Nuck	1	...	1	1	...	...	...	...	...	...	...
" of spermatocele	1	1	...	...	...	...	1	...	...	...	...
For contracted external meatus	2	2	...	...	1	...	...	...	1	...	...
Pyosalpinx	2	...	2	...	...	...	...	2	...	...	...
VASCULAR SYSTEM.											
Ligation of femoral artery	1	1	...	...	...	...	...	1	...	...	...
" of axillary artery	1	...	1	...	...	...	...	...	...	...	1
" of brachial artery	1	...	1	...	...	...	1	...	...	...	...
" of internal jugular vein	6	5	1	...	1	4	1	...	...	...	...
" of common femoral vein	1	1	...	...	1	...	...	1	...	...	...
" of internal saphenous	1	1	...	...	...	...	1	...	...	...	...
Excision of varix of facial vein	1	...	1	...	...	...	1	...	...	...	...
" of varicose veins	87	59	28	...	...	17	50	16	4	...	...
" of varicocele	66	66	...	...	...	31	33	2	...	...	...
Subcutaneous ligature of varicocele	3	3	...	...	...	1	2	...	...	...	...
LYMPHATIC SYSTEM.											
Excision of inflamed glands	6	3	3	...	...	1	4	1	...	...	...
" of tuberculous glands	57	17	40	1	4	19	23	8	...	...	...

Operations—continued.

Duration of residence after operation.												Result.			Remarks.
Dys.	Dys.	Wks.	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.			
1-4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	+12							
1	1	1	1	1	1	1	1	1	3	9	1	1	1	1	Stricture 2; enlarged prostate 1.
	3	7	1	1	1	1	1	1	1	9	1	1	1	1	Stricture 2; enlarged prostate 1.
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Complete removal 1; partial 2.
2	2	1	1	1	1	1	1	1	2	3	1	1	1	1	Elarged prostate 3; tubercle 2.
	3	3	1	1	1	1	1	1	6	1	1	1	1	1	Twisted ureter causing hydronephrosis 1.
1	1	5	1	1	1	1	1	1	4	1	1	2	2	2	Nephralgia 3; tuberculous kidney 2; hydronephrosis 1; pyonephrosis 1.
	1	2	3	1	1	1	1	1	6	1	1	1	1	1	Pyonephrosis 2.
1	1	4	3	1	1	1	1	1	8	1	1	1	1	1	Pyonephrosis 3; hydronephrosis 3; congenital cystic kidney 2; tuberculous kidney 1.
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Ruptured kidney.
		1	1	1	1	1	1	1	1	1	1	1	1	1	Previous nephrectomy for tuberculous kidney.
1	4	3	1	1	1	1	1	1	8	1	1	1	1	1	
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Fatal: pyelonephritis.
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
8	4	2	1	1	1	1	1	1	14	1	1	1	1	1	Castration 7; orchidopexy 7.
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1	4	1	1	1	1	1	1	1	5	1	1	1	1	1	Tuberculous 5. Fatal: sarcomatous.
8	6	1	1	1	1	1	1	1	15	1	1	1	1	1	Excision 13; incision and plugging with gauze 2.
4	1	1	1	1	1	1	1	1	5	1	1	1	1	1	Tapping of hydrocele of tunica vaginalis 1.
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	
	1	2	1	1	1	1	1	1	2	1	1	1	1	1	Removal of Fallopian tubes in both cases.
		2	1	1	1	1	1	1	2	1	1	1	1	1	
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	In Hunter's canal for popliteal aneurysm.
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Dislocation of humerus; rupture of artery.
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Secondary haemorrhage.
2	1	1	2	1	1	1	1	1	3	1	1	1	1	1	Lateral sinus pyæmia 6.
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Septic thrombosis.
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	For varicose veins; veins afterwards excised.
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
44	41	2	1	1	1	1	1	1	87	1	1	1	1	1	Circumcision 1; hydrocele of tunica vaginalis incised and plugged 1; septicæmia 1,
51	12	3	1	1	1	1	1	1	66	1	1	1	1	1	Varicose veins 2; [vide Special Table III.] compound fracture of femur 1.
3	1	1	1	1	1	1	1	1	3	1	1	1	1	1	Hydrocele 1.
1	2	3	1	1	1	1	1	1	6	1	1	1	1	1	
35	20	2	1	1	1	1	1	1	43	14	1	1	1	1	Circumcision 1; gouging for tuberculous osteomyelitis 1.

TABLE III.—*Surgical*

Operations—continued.

Duration of residence after operation.								Result.				Remarks.
Dys.	Dys.	Wks	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.	
1-4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	+12				
...	1	...	...	...	...	...	...	1	...	...	...
6	24	4	...	...	...	...	...	8	26	...	...
...	1	1	...	...	...	...	...	1	1	...	...
...	...	1	...	...	...	...	...	1	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...
...	...	1	...	...	...	...	...	...	1	...	...
...	...	3	1	...	...	...	...	4	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...
...	3	...	1	...	...	...	...	4	...	...	...
1	1	1	...	...	...	...	...	3	...	...	...	Isthmus 2; accessory thyroid 1.
...	...	1	...	...	...	...	...	1	...	...	...
1	...	2	1	...	...	...	...	...	3	...	1	Fatal: septic pericarditis.
2	1	4	...	...	...	...	...	4	1	...	2	Fatal: pyæmia 1; pericarditis and endocarditis 1.
...	...	1	1	...	...	...	...	1	1	...	...
1	...	...	...	...	...	...	...	...	1	...	...
2	...	...	...	...	...	...	...	2	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...
...	1	...	...	...	...	...	...	...	1	...	...	Tibia also.
2	2	...	...	...	...	...	...	4	...	...	...
...	1	...	...	...	...	...	...	...	1	...	...
...	1	...	...	...	...	...	...	...	1	...	...
...	2	2	...	...	...	...	...	2	1	...	1	Fatal: marasmus.
2	5	11	6	6	1	...	...	...	31	...	...	Tuberculous hip 18.
...	1	3	5	...	1	...	...	3	7	...	...	Tuberculous hip 4.
...	2	...	3	1	...	...	...	2	4	...	...
1	2	1	2	...	...	...	...	2	4	...	...	Tuberculous glands of neck 1.
1	...	...	...	...	...	...	...	1	...	...	...
...	1	1	...	...	...	...	...	...	2	...	...
...	...	1	...	...	...	...	...	...	1	...	...
1	...	...	...	...	...	...	...	...	1	...	...
1	1	...	...	...	...	...	...	...	1	1	...	
3	5	3	2	...	...	...	...	10	3	...	...
1	...	...	...	...	...	...	...	1	...	...	...	Compound comminuted fracture.
...	2	1	...	...	...	...	...	...	3	...	...
1	...	1	...	...	...	...	...	1	1	...	...
1	...	...	...	...	...	...	...	...	1	...	...
...	...	1	...	...	...	...	...	1	...	...	...	Subsequent amputation.
...	1	...	...	...	...	...	...	1	...	...	...

TABLE III.—*Surgical*

SURGICAL OPERATIONS.	Total.	Sex.		Age.								
		M.	F.	5	10	15	20	30	40	50	60	+ 60
OSSEOUS SYSTEM—continued.												
Removal of necrosed bone from—												
Pelvis	1	...	1	...	...	...	...	1	...	...	...	...
Femur	9	6	3	1	...	3	2	2	...	1	...	...
Patella	1	...	1	...	...	...	...	...	...	1	...	...
Tibia	15	12	3	...	4	6	...	1	3	1	...	...
Fibula	1	...	1	...	...	...	...	...	...	...	1	...
ARTICULAR SYSTEM.												
Shoulder—Excision	1	1	...	...	...	...	...	1	...	...	...	...
Elbow—Excision	4	3	1	...	...	2	2	...	...	...	...	...
Arthroectomy	6	5	1	...	5	1	...	...	...	...	...	...
Wrist—Arthroectomy	2	1	1	1	...	1	...	...	...	...	...	...
Hip—Excision	9	6	3	...	3	3	1	1	...	1	...	...
Arthroectomy	2	1	1	...	1	1	...	...	...	...	...	...
Arthrotomy	6	4	2	...	2	3	...	...	1	...	...	...
Knee—Excision	17	13	4	...	1	6	6	3	...	1	...	...
Arthroectomy	2	2	...	2	...	...	...	...	...	...	...	...
Arthrotomy	12	8	4	1	2	4	2	2	...	1	...	...
Extraction of loose body	1	1	...	...	...	...	1	...	...	...	...	...
Excision of displaced semilunar cartilage	3	2	1	...	...	1	2	...	...	...	...	...
Ankle—Arthroectomy	5	5	...	1	...	1	2	1	...	...	...	...
Sacro-iliac—Arthrotomy	2	2	...	...	...	1	...	1	...	...	...	...
Metatarso-phalangeal—Excision	2	...	2	...	...	...	2	...	...	...	...	...
Phalangeal—Excision	10	7	3	...	...	6	3	1	...	...	...	...
Passive movement	5	2	3	...	...	2	...	3	...	...	...	...
LOCOMOTOR SYSTEM—Various.												
Excision of bursæ and ganglion	25	12	13	...	1	6	10	3	2	3	...	...
" of teno-synovitis	1	...	1	...	1	...	...	...	...	...	...	...
Scraping of teno-synovitis	1	...	1	...	...	...	1	...	...	...	...	...
Amputation for disease—												
Hip	3	2	1	...	...	1	...	1	...	1	...	1
Tungh	10	6	4	...	...	1	1	1	1	1	1	5
Knee-joint	1	1	...	...	1	...	...	...	...	...	...	...
Leg	4	4	...	...	1	2	...	...	...	...	1	...
Syme	1	1	...	...	1	...	...	...	...	1	...	...
Pirogoff	1	1	...	...	1	...	...	...	...	...	...	...

Operations—continued.

Duration of residence after operation.								Result.				Remarks.	
Dys.	Dys.	Wks.	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.		
1-4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	12+12					
...	2	3	1	...	...	...	...	...	1	...	...
...	2	3	2	2	...	...	...	...	3	6	...	Humerus and tibia 1; tuberculous hip 1.	
...	...	...	...	1	...	...	...	...	1	...	...
1	3	7	3	1	...	...	...	...	1	14	...	Fibula 1. Erysipelas 1, <i>vide</i> Special Table II.	
...	...	1	...	...	...	...	...	...	1	...	...
...	...	1	...	...	...	...	...	...	1	...	...
...	...	2	1	1	...	...	...	...	3	1	...	Tuberculous.	
...	...	4	1	...	...	...	...	...	6	...	...	Tuberculous 4.	
...	1	1	...	...	...	...	...	...	2	...	...	Tubercle 6.	
...	1	1	...	...	...	...	...	...	2	...	...	Partial 2.	
...	...	4	2	1	1	1	1	...	2	6	...	Fatal, after amputation of hip-joint.	
...	...	...	...	1	...	1	...	...	2	...	...
...	1	1	1	2	...	...	...	1	...	6	...		
...	1	9	6	1	...	...	...	...	12	4	...	Tubercle 14; osteo-arthritis 1; contractile knee 1. Caries sicca of humerus 1.	
...	...	1	...	...	1	...	...	...	2	...	...	Tubercle 2.	
...	4	4	1	3	...	...	...	...	8	3	...	Tubercle 4; puerperal arthritis 1; arthritis 1; septic arthritis 6.	
...	...	1	...	...	...	...	...	...	1	...	...
...	2	1	...	...	...	...	...	...	3	...	...	Internal in all.	
...	2	1	2	...	...	...	...	...	2	...	...
...	...	2	...	...	...	...	...	...	2	...	...
...	1	1	...	...	...	...	...	...	2	...	...	Hallux valgus 2.	
...	6	3	1	...	...	...	...	...	10	...	...	Hammer-toe 9; osteo-arthritis 1.	
1	3	...	1	...	...	...	...	...	5	...	...
1	18	5	1	...	...	...	...	...	25	...	...	Hammer-toe 1.	
...	1	...	...	...	...	...	...	...	1	...	...
...	1	...	...	...	...	...	...	...	1	...	...
1	...	...	2	...	...	...	...	...	2	...	1	Furneaux Jordan 2. Tubercle 3.	
3	2	3	2	...	...	...	...	...	3	1	...	Lower third 9; upper third 1. Gangrene of foot 3; tuberculous hip 1; tuberculous knee 3; puerperal arthritis 1; cellulitis of leg 2.	
...	1	...	...	...	...	...	...	...	1	...	...	Acute traumatic gangrene of foot.	
...	4	...	...	...	...	...	...	...	4	...	...	Tuberculous ankle 1; septicæmia 1; tuberculous tarsus 1; elephantiasis 1. Upper third 3; lower third 1.	
...	1	...	...	...	...	...	...	...	1	...	...	Pes cavus.	
...	1	...	...	...	...	...	...	...	1	...	...	Talipes equino-varus.	

TABLE III.—*Surgical*

SURGICAL OPERATIONS.	Total.	Sex.		Age.						
		M.	F.	-5	-10	-20	-30	-40	-50	
LOCOMOTOR SYSTEM—<i>Various—cont.</i>										
Amputation for disease— <i>cont.</i>		2	1	1	...	...	...	...	...	2
Shoulder										
Arm	1	...	1	...	...	...	...	...	1	...
Forearm	1	1	...	...	...	1	...	...	...	...
Wrist	2	...	2	...	...	1	1	...	...	...
Digits	8	4	4	...	...	1	2	1	1	2
Phalanges	3	2	1	...	...	...	...	2	1	...
Primary amputation—										
Forearm	2	1	1	...	1	...	...	...	1	...
Carpo-metacarpal	1	1	...	...	...	...	...	...	...	1
Digits	2	2	...	...	...	1	...	...	1	...
Thigh	4	3	1	1	...	...	...	1	1	1
Leg	1	1	...	...	...	...	...	1	...	...
Secondary amputation—										
Thigh	1	1	...	...	...	...	...	...	1	...
Phalanges	4	4	...	1	...	1	2	...	...	...
Wiring of patella	10	8	2	...	...	...	1	3	5	1
" of olecranon	2	2	...	...	...	1	...	1	...	...
" of tibia	3	2	1	...	...	...	1	...	...	2
" of inferior maxilla	2	2	...	...	1	...	...	1	...	...
Reduction of dislocations—										
Humerus	5	3	2	...	...	...	1	1	...	2
Radius and ulna	3	3	...	...	1	1	...	...	...	1
Thumb	2	2	...	1	1	...	...	...	...	...
Digit	2	2	...	...	1	1	...	...	...	...
Hip	2	1	1	...	...	...	2	...	...	...
Patella	1	1	...	...	...	...	...	...	...	...
Astragalus	1	1	...	...	...	...	1	...	...	...
Foot	1	1	...	...	...	...	...	...	1	...
Suture of tendons	10	8	2	...	5	5	...	...	...	...

Operations—continued.

Duration of residence after operation.										Result.				Remarks.
Dys.	Dys.	Wks	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.		
1-4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	+12						
...	...	1	1	...	...	...	...	...	2	...	...	...	For pain after injury to brachial plexus, division of nerve-roots 1; recurrent scir- rhous of breast, axillary and supra-clavicular glands 1.	
...	...	1	...	...	...	...	...	...	1	...	...	...	Chondroma of arm.	
...	1	...	...	...	...	...	...	...	1	...	...	...	Tuberculous wrist.	
...	1	1	...	...	...	...	...	...	2	...	...	...	Tubercle 1; necrosis 1.	
2	3	3	...	...	...	...	...	...	8	...	...	...	Cellulitis 3; hammer-toe 2; contraction 2; perforating ulcer 1.	
...	2	1	...	...	...	...	...	...	3	...	...	...	Tubercle 1; gangrene 1; deformity 1.	
...	...	2	...	...	...	...	...	...	2	...	...	...	Crushed hand 2. Lower third 2.	
...	...	1	...	...	...	...	...	...	1	...	...	...	Crushed hand.	
1	...	1	...	...	...	...	...	...	2	...	...	...	Compound comminuted fracture of femur 2; compound fracture of tibia and fibula 2. Upper third 2; lower third 2.	
2	...	1	1	...	...	...	...	...	2	...	...	...	1 Compound fracture of tibia and fibula. Upper third. Pneumonia.	
1	...	...	...	...	...	...	...	...	...	...	...	...	1 Lower third.	
1	2	1	...	...	...	...	...	...	4	...	...	...	...
...	...	3	4	2	1	...	...	...	6	3	...	...	1 Compound 1. Suppuration 3.	
...	1	1	...	...	...	...	...	...	2	...	...	...	1 Fatal: compound fracture of tibia and fibula, delirium tremens. Ununited fracture of tibia and fibula 2. Screwed 1. Erysipelas 1.	
1	...	...	1	1	...	...	...	...	2	...	...	...	Empyema 1.	
3	1	...	1	...	...	...	...	...	5	...	...	...	Fracture of external tuberosity 1; rupture of axillary artery 1. Subcoracoid 5. Fractured fibula 1.	
...	1	1	1	...	...	...	...	...	3	...	...	...	Backwards 2; outwards 1. Compound 2.	
...	2	...	...	...	...	...	...	...	2	...	...	...	Compound 1.	
...	1	1	...	...	...	...	...	...	2	...	...	...	Sciatic 1; dorsal 1. Traumatic 1; following septic arthritis 1.	
...	1	...	...	...	...	...	...	...	1	...	...	...	Outwards. Quadriceps ruptured.	
...	1	...	...	...	...	...	...	...	1	...	...	...	Astragalus excised; displacement forwards and outwards.	
...	1	...	...	...	...	...	...	...	1	...	...	...	Dislocation of foot upwards without frac- ture of tibia or fibula.	
3	5	1	1	...	...	...	...	...	10	...	...	...	Tendo Achillis 1.	

TABLE III.—*Surgical*

SURGICAL OPERATIONS.	Total.	Sex.		Age.							
		M.	F.	-5	-10	20	30	-40	-50	-60	+60
NERVOUS SYSTEM.											
Resection and suture of nerves	4	4	...	...	...	...	2	2	...	1	...
Suture of nerves	6	4	2	...	1	2	1	...	1	1	...
Excision of bulbous nerves	1	1	...	...	...	1	...	...	...	...	...
Painful scar	1	1	...	...	...	...	...	...	...	1	...
Neurectomy	1	1	...	...	...	1	...	...	...	...	...
Excision of Meckel's ganglion	1	...	1	...	...	...	...	...	...	...	1
Nerve grafting	1	...	1	...	...	...	...	...	...	1	...
Exploration of brachial plexus	1	1	...	...	...	...	...	...	...	1	...
Excision of hernia cerebri	1	...	1	...	1	...	...	...	...	...	...
RESPIRATORY SYSTEM.											
Empyema	20	15	5	3	4	4	3	2	4	...	...
Tracheotomy	13	11	2	1	1	...	1	2	3	3	2
Drainage of maxillary antrum	7	4	3	...	...	1	3	3	...	...	...
Turbinection	15	12	3	...	1	8	5	...	1	...	...
Straightening of deflected septum	9	9	...	...	...	3	5	1	...	...	...
Estlander	3	2	1	...	...	...	1	1	1	...	...
Scraping for rhinitis	1	...	1	...	...	...	1	...	...	...	...
Pyopneumothorax	2	2	...	...	...	...	1	1	...	...	...
Exploration of lung	1	1	...	...	...	1	...	...	...	...	...
Excision of lung	1	...	1	...	...	...	...	...	1	...	...
AUDITORY SYSTEM.											
Incision of membrana tympani	1	1	...	...	...	...	1	...	...	...	...
Aural polyp	1	1	...	...	...	...	...	...	1	...	...
Removal of bone from mastoid	37	20	17	3	5	12	11	2	1	3	...
Complete mastoid operation, followed later by Thiersch grafting of cavity	7	5	2	1	2	1	2	1	...	...	...
Removal of bone from mastoid and ligature of internal jugular vein	6	5	1	...	1	4	1	...	...	...	...
Removal of bone from mastoid and exploration of temporo-sphenoidal lobe and cerebellum	2	1	1	1	1	...	...	...	...	...	...
Exploration of temporo-sphenoidal lobe	4	1	3	1	3	...	...	...	...	...	...

Operations—continued.

Duration of residence after operation.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.		
...	1	2	1	...	...	...	...	...	3	1	...	...	Median 2; ulnar 1; anterior tibial 1.	
...	4	2	...	...	...	...	...	...	6	...	...	...	Median 1; ulnar 4; radial 1. Cut tendons 6.	
...	...	1	...	...	...	...	...	...	1	...	...	...	After amputation of arm.	
...	1	...	...	...	...	...	...	...	1	...	...	...	Cords of brachial plexus removed for painful stump.	
...	...	1	...	...	...	...	...	...	1	...	...	...	Facial neuralgia.	
...	1	...	...	...	...	...	...	...	1	...	...	...	Rabbit's sciatic sutured between divided ends of ulnar.	
...	...	...	1	...	...	...	...	...	1	...	...	...	After trephining for cerebral abscess.	
...	1	4	10	4	1	...	...	...	15	3	...	2	Double 1. Excision of rib in all. Fatal: abcess of liver 1; gangrene of lung 1.	
4	2	3	3	...	1	...	...	...	4	3	...	6	Fatal: cellulitis of neck 1; malignant, of larynx 2; hemorrhage around larynx 1; tetanus 1; sarcoma of thyroid 1.	
2	5	...	...	...	...	...	...	...	3	4	...	...	Cleft palate 1.	
5	9	...	1	...	...	...	...	...	13	2	...	...
1	6	2	...	...	...	...	...	...	8	1	...	...
...	...	3	...	...	...	...	...	...	2	1	...	...
1	...	...	...	1	...	...	...	...	1	...	...	...
...	...	1	...	1	...	...	...	...	...	...	...	2	Resection of rib 2.	
...	...	1	...	...	...	...	...	...	...	...	...	1	Bronchiectasis.	
...	1	...	...	...	...	...	...	...	...	...	...	1	Gangrene of lung.	
...	...	...	...	...	...	...	...	...	1	...	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...
1	...	...	...	...	...	...	...	...	1	...	...	...
1	12	15	8	1	...	...	...	...	17	17	...	3	Aural polyp 1; erysipelas 1. Fatal: cerebellar abcess and basal meningitis 1; temporo-sphenoidal abcess 1; basal meningitis 1.	
...	...	3	3	1	...	...	...	...	7	...	...	...	For account of operation see 'Medical and Chirurgical Trans.,' 1900.	
2	1	1	2	...	...	...	...	...	3	...	...	3		
2	...	...	...	...	...	...	...	...	...	...	...	2	Tuberculous meningitis in both.	
2	...	...	1	1	...	...	...	...	1	1	...	2	Abscess found in 3 cases; no abscess in 1.	

TABLE III.—*Surgical*

SURGICAL OPERATIONS.	Total.	Sex.		Age.							
		M.	F.	-5	-10	-20	-30	-40	-50	-60	+ 60
DEFORMITIES.											
Osteotomy of femur, Macewen's	4	2	2	...	1	2	1	...	...	...	...
" " shaft	1	...	1	...	...	1	...	...	...	...	...
" of tibia and fibula	4	4	...	1	...	2	1	...	...	...	...
" of tibia	1	1	...	...	...	...	1	...	...	...	...
" of humerus	1	1	...	...	1	...	...	...	...	...	...
" of elbow	1	...	1	...	...	1	...	...	...	...	...
" of radius and ulna	1	1	...	...	...	...	1	...	...	...	...
Cuneiform osteotomy of knee	3	2	1	...	...	3	...	...	...	...	...
Plastic. " of humerus	1	1	...	...	...	1	...	...	...	...	1
Plastic.	18	6	12	2	1	7	5	2	...	...	...
Tenotomy for infantile paralysis	1	...	1	...	...	1	...	...	...	...	...
" for talipes	25	16	9	9	6	5	4	1	...	...	...
" for pes cavus	2	1	1	...	...	2	...	...	...	...	...
" for hallux valgus	1	1	...	...	...	1	...	...	...	...	...
" for hammer-toe	3	1	2	...	...	2	1	...	...	...	...
" for contracted toes	1	...	1	...	...	...	1	...	...	...	...
" for torticollis	5	4	1	2	1	2	...	...	...	...	...
" of tendo Achillis	1	1	...	...	...	1	...	...	...	...	...
Myotomy for torticollis	1	...	1	...	...	1	...	...	...	...	...
Excision of spinal accessory nerve	1	1	...	1	...	...	...	1	...	...	...
Phelps's operation	1	1	...	1	...	...	...	...	...	...	...
Buchanan's operation	2	2	...	1	...	1	...	...	...	...	...
Tarsectomy	3	2	1	...	1	2	...	...	...	...	...
Astрагаectomy	3	3	...	...	...	2	1	...	...	...	...
Wrenching for pes planus	3	2	1	...	...	1	2	...	...	...	...
Avulsion of nail	4	2	2	...	...	1	2	...	...	1	...
Arthrodesis of knee	1	1	...	...	1	...	...	...	...	...	...
" of ankle	1	1	...	...	1	...	...	...	...	...	...
Excision of lower end of ulna	1	1	...	...	...	...	...	...	...	1	...
MALFORMATIONS.											
Single harelip	8	6	2	8	...	...	...	...	...	...	...
Double harelip	3	3	...	3	...	...	...	...	...	...	...
Cleft palate	10	4	6	9	...	1	...	...	...	...	...
Excision of branchial fistula	1	...	1	1	...	...	...	...	...	...	...
Webbed fingers	2	...	2	2	...	...	...	...	...	...	...

Operations—continued.

Duration of residence after operation.											Result.				Remarks.
Dys.	Dys.	Wks	Mts.	C.	R.	U.	D.								
1-4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	+12							
...	...	2	2	...	...	...	3	1	...	...	...	...	...	Double 1; of tibia and fibula 1.
...	...	...	1	...	...	...	...	1	...	...	...	...	...	Rachitic deformity.
...	...	2	2	...	...	...	3	1	...	...	...	...	...	Genu valgum 2; rachitic deformity 1; flat-foot 1. Double 1. Cuneiform of tibia 1; cuneiform of fibula with transplantation of bone to tibia 1.
...	...	1	...	...	...	...	1	...	...	...	...	...	...	Vicious union after fracture of tibia and fibula.
...	...	1	...	...	...	...	1	...	...	...	...	...	...	Previous fracture.
...	...	1	...	...	...	...	1	...	...	...	...	...	...	Ankylosed elbow.
...	...	1	...	...	...	...	1	...	...	...	...	...	...	Linear of radius and cuneiform of ulna with wiring.
...	...	1	2	...	...	...	3	...	...	...	...	...	...	Previous excision of knee followed by ankylosis with flexion 3.
...	1	...	...	...	...	...	1	...	...	...	...	...	...	Vicious union.
1	6	6	4	1	...	...	16	2	...	...	...	...	...	Nose 3; lip 1; palate 1; cheek 1; wrist 2; arm 1; fingers 4; leg 1; eyelid 2; foot 2.
...	...	1	...	...	...	...	...	1	...	...	...	...	...	Tendo Achillis, double.
4	12	5	2	2	...	...	22	3	...	...	...	...	...	Equino-varus 19; equinus 6. Open tenotomy 3. Diphtheria 1.
...	1	1	...	...	...	...	2	...	...	...	...	...	...	Double.
1	2	...	...	...	...	...	1	...	...	...	...	...	...
...	...	1	...	...	...	...	1	...	...	...	...	...	...
1	2	2	1	...	...	...	5	...	...	...	...	...	...	Open method 5.
...	...	1	...	...	...	...	1	...	...	...	...	...	...	Splint paralysis.
...	...	1	...	...	...	...	1	...	...	...	...	...	...
...	...	1	...	...	...	...	1	...	...	...	...	...	...	Spasmodic torticollis.
...	...	1	...	...	...	...	1	...	...	...	...	...	...	Talipes equino-varus.
...	1	1	...	...	...	...	2	...	...	...	...	...	...
...	...	1	1	1	...	...	2	1	...	...	...	...	...	Septicæmia; amputation of leg 1.
...	...	2	1	...	...	...	3	...	...	...	...	...	...	Partial 1; complete 2. Pes planus 1; pes cavus 1; equino-varus 1.
...	2	1	...	...	...	...	1	2	...	...	...	...	...
4	...	...	...	...	...	...	4	...	...	...	...	...	...	Ingrowing toe-nail 4.
...	...	1	...	...	...	...	1	...	...	...	...	...	...	Infantile paralysis; followed by arthrodesis of ankle.
...	...	1	...	...	...	...	1	...	...	...	...	...	...
1	1	...	...	...	...	...	1	...	...	...	...	...	...	Old Colles' fracture.
1	7	...	...	...	...	...	6	2	...	...	...	...	...	Wound broke down again 2.
...	3	...	...	...	...	...	1	2	...	...	...	...	...	Wound broke down 1.
...	4	5	1	...	...	...	3	5	2	...	...	...	...	Adenoids 1.
...	1	...	...	...	...	...	1	...	...	...	...	...	...
...	2	...	...	...	...	...	1	1	...	...	...	...	...	Same case.

TABLE III.—*Surgical*

SURGICAL OPERATIONS.	Total	Sex.		Age.							
		M.	F.	-5	-10	-20	-30	-40	-50	-60	+ 60
MALFORMATIONS—continued.											
For congenital dislocation of hip .	1	...	1	...	...	1	...	...	...	...	...
Imperforate anus . . .	1	1	...	1	...	...	...	...	...	...	...
Excision of spina bifida . . .	1	1	...	1	...	...	...	...	...	...	...
MISCELLANEOUS.											
Trephining and raising of depressed fracture of skull .	7	7	...	...	1	1	2	...	1	1	1
Raising of depressed fracture of skull and removal of fragments .	1	1	...	1	...	...	...	...	...	...	...
Trephining for subcranial haemorrhage .	2	2	...	...	...	...	...	...	...	1	1
Scraping of sinuses	22	11	11	1	3	4	8	3	1	...	2
Excision of eyeball	2	2	...	...	...	...	...	1	...	1	...
Trephining for intra-cerebral injections of antitetanic serum .	1	1	...	...	...	...	...	...	1	...	...
Laminectomy	2	2	...	...	1	...	...	...	...	1	...
Irrigation and suture of spinal abscess and drainage of spinal abscess .	6	4	2	...	2	4	...	...	...	...	...
"	16	10	6	1	5	5	4	1	...	...	...
Scraping of ulcer	3	2	1	...	...	1	1	1	...	...	...
Excision of ulcer	5	1	4	...	...	...	3	1	...	...	1
Scraping of lupus	12	3	9	...	...	5	4	3	...	...	...
Scraping of carbuncle	3	2	1	...	...	...	...	...	2	1	...
Excision of lupus	14	1	13	...	1	4	5	2	1	1	...
Thiersch grafting	46	20	26	11	3	11	8	9	2	1	1
Extraction of foreign body	17	5	12	1	2	3	5	3	3	...	...
Removal of wire from knee	1	...	1	...	...	...	...	...	...	1	...
Injection of osmic acid in nerves for neuralgia	1	...	1	...	...	1	...	...	...	...	...
Excision of gumma	1	...	1	...	...	...	1	...	...	...	...
Exploration of perinephritic abscess	1	1	...	...	...	...	...	1	...	...	...
" of psoas abscess	1	1	...	...	...	...	1	...	...	...	...
Straightening of vicious union	1	1	...	...	1	...	...	...	...	...	...
Total	1301	826									
							2127				

Operations—continued.

Duration of residence after operation.										Result.				Remarks.
Dys.	Dys.	Wks.	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.		
1-4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	+12						
...	...	...	1	...	...	...	...	...	1	...	...	...	...
1	...	...	...	...	...	...	...	...	1	...	...	...	Rectum brought down.	
1	...	...	...	...	...	...	...	...	1	...	...	...	Meningocele.	
2	3	2	...	...	...	...	...	...	5	...	...	2		
...	...	1	...	...	...	...	...	...	1	...	...	...
2	...	...	...	...	...	...	...	...	...	...	...	2	Fractured base.	
...	11	7	4	...	...	...	...	...	8	14	...	...
1	1	...	...	...	...	...	...	...	1	...	...	1	Penetrating wound of orbit, laceration of brain 1; ruptured globe 1.	
1	...	...	...	...	...	...	...	...	...	...	...	1	Subcutaneous injections given as well.	
...	...	1	1	...	...	...	...	...	2	...	...	...	Fracture dislocation of spine 1; exploration of cord 1.	
...	...	3	3	...	...	...	...	...	2	4	...	...
...	3	4	8	1	...	...	...	...	...	15	...	1		
1	2	...	...	...	...	...	...	...	2	1	...	...
1	1	1	2	...	...	...	...	...	3	2	...	...
4	7	1	...	...	...	...	...	...	12	...	...	...	Cautery 1. Erysipelas 1, <i>vide</i> Special Table II.	
...	1	1	1	...	...	...	...	...	3	...	...	...
2	4	7	1	...	...	...	...	...	5	9	...	...	Grafting 5.	
3	17	15	11	...	...	...	...	...	42	4	...	...
13	4	...	...	...	...	...	...	...	17	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...	Supra-orbital, mental, and auriculo-temporal.	
...	1	...	...	...	...	...	...	...	1	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...	Cause not found.	
...	...	1	...	...	...	...	...	...	1	...	...	...	Femur.	
										1528	436	13	150	
										2127				

SUMMARY OF DISEASES.

GENERAL DISEASES.

ERYSIPelas (admitted with the disease).

Males 26, females 21. C. 38, R. 1, D. 8.

Situation.—Upper extremity 7; lower extremity 11; scalp 3; neck 1; trunk 1; face 25. Cellulo-entaneous 2.

Mode of entrance of micro-organism.—Wounds 17; abscess 1; impetigo 2; vaccination 2; cellulitis 1.

Treatment.—Incisions 7; hot lotions or boracic powder in remainder.

Fatal cases.

1. H. H. D.—, male, æt. 3 months. Impetigo on scalp. Erysipelas arose on the day before admission, starting from scalp and extending on to face and right arm. On admission face much swollen, eyes being completely blocked up. Temp. 100·6°. Pulse feeble. Temperature on the 3rd day rose to 104°, child gradually got weaker and died on 4th day. P.M.—Small localised collection of pus between the hyoid bone and thyroid cartilage. Cervical glands enlarged, but not suppurating. Lungs somewhat deficiently expanded at their bases, but otherwise healthy.

2. E. R.—, male, æt. 56. Canvasser. Admitted with erysipelas of face. Temp. 103·8°. Next day temperature rose to 104·4°. Patient became delirious and very violent, necessitating a porter to keep him in bed. Pulse rapid. On 3rd day rash began to fade, patient became much weaker, with stertorous breathing, and died on 4th day. P.M.—Multilobular cirrhosis of liver. Heart fatty and dilated. Lungs congested and œdematosus, with pleuritic adhesions at apices. Uratic deposits in great toe-joints.

3. T. S.—, male, æt. 69. Incision for axillary abscess, following suppurating wound of thumb, a few days before admission. Temperature on admission 99·4°. For ten days patient considerably improved, but on the 11th erysipelas broke out afresh, extending on to the chest and down the arm. Temp. 104°. Albuminuria, of which there had been a trace on admission, increased in amount; and though temperature came down, patient gradually got weaker, and died on 17th day. P.M.—Chronic interstitial nephritis. Heart hypertrophied and dilated.

4. E. M.—, male, æt. 53. Warehouseman. Admitted with a ten days' history of abscess in axilla, following sore on finger, with cellul-o-cutaneous erysipelas over chest and back. Temp. 102·2°. Incisions made on day of admission. Erysipelas continued to spread, and further incisions made on 4th day, quantities of pus escaping. On 11th day further incisions made. On 14th day sero-purulent fluid found in right knee-joint, which was incised, irrigated, and resutured; further incisions made into arm and back; antistreptococcus serum given and injected daily until death on 20th day.

Fluid from knee-joint examined bacteriologically found to contain *Streptococcus pyogenes* in pure culture. No P.M.

5. S. B.—, male, æt. 57. Ostler. A week before admission, while cleaning out a stable, patient had struck himself with a pitchfork on the leg, which soon afterwards became inflamed. On admission cellul-o-cutaneous erysipelas of leg as far as the knee; rhonchi in both lungs, with signs of consolidation at the bases. Pulse feeble; patient delirious. Death on 2nd day. P.M.—Lungs much congested and oedematous; liver fatty. Left kidney atrophied, and pelvis contained a hard branching calculus. Right kidney hypertrophied. Brain healthy, but vessels at base atheromatous.

6. E. T.—, female, æt. 2 months. Admitted with erysipelas of chest, back, buttocks, and arms. Temp. 103·6°. Erysipelas gradually faded for a time, but on 7th day reappeared, and on following day temperature rose to 105·2°. Sudden death with convulsions on 9th day. P.M.—Cloudy swelling of all organs. Heart, oblique opening through the foramen ovale; no dilatation of right auricle.

Acute tetanus.—1. C. H. D.—, male, æt. 44. Pianoforte maker. History of injury could not be obtained. Stiffness of jaw noticed three days before admission, becoming more marked during the next two days, accompanied by alteration in speech. Spasm of jaw on morning of admission. On admission teeth could only be separated to the extent of half an inch. Dribbling of saliva. Liquids swallowed only with difficulty, solids not at all. Rigidity of neck. Tongue foul. Temp. 98·4°. Patient was put on rectal feeding, and 20 c.c. of antitetanus serum injected into flank. Following day spasms of arms and legs treated by inhalations of chloroform. 10 c.c. of serum injected. Third day symptoms aggravated; spasm of larynx, tracheotomy; temp. 104·4°. Subcutaneous injection of serum 10 c.c. In the afternoon right frontal bone trephined, and concentrated serum 5 c.c. (equal to 10 c.c. of ordinary serum) injected into right frontal lobe. Five hours after operation temperature was 102°, failing at midnight to 97°. Patient had snatches of sleep, but when awake was very restless and attempted to get out of bed. Respirations very rapid. No spasms during the night. On day after operation temperature rose again to 103·6°, respirations 44, pulse 142. Respirations became weaker and more rapid, and he died twenty-three hours after operation. Patient had no spasm after operation until half an hour before his death, when he had a general spasm of all his limbs. P.M.—A small collection of pus found under the skin of the right hallux, and on incising it a splinter of wood, a quarter of an inch in length, was seen. Brain: dura normal diffuse haemorrhage in the pia arachnoid over the frontal lobes on both sides. The blood had tracked along the anterior fissure, and had become superficial at

the left locus perforatus anticus, and passed in the subdural space as far as the pons. Layer of clot very thin. No trace of needle or injection in frontal lobe. Brain and cord apparently normal. Upper and lower lobes of right lung consolidated by pneumonia; upper lobe of left lung crepitant, lower lobe consolidated. Heart dilated.

2. J. F—, male, æt. 71. A fortnight before admission he fell down and received a wound of his elbow. Two days before admission patient noticed stiffness of neck and jaws, and on following day was unable to open his mouth or to swallow. On admission jaws rigidly fixed, and on attempting to drink there was marked spasm of his pharynx and of his muscles of mastication; no spasm of limbs, but slight opisthotonus. Temp. 99°. Wound on elbow excised and attempt made to nasal-feed under chloroform, but without success. Chloral, grs. xl, given *per rectum*. Rectal feeding every six hours, chloral, grs. xl, being given at same time. On following day symptoms more marked. Temp. 102·6. Third day spasms much more severe, involving muscles of respiration, so that at times artificial respiration became necessary; later same day spasm of the glottis, tracheotomy, and death two hours later. P.M.—The pia arachnoid contained an excess of clear fluid, and the membrane had a milky appearance. Brain small and hyperæmic. Upper part of cord softened. Lungs emphysematous and somewhat engorged. Heart small but healthy.

Syphilis.—*Congenital.*—Males 3, females 2. R. 3, D. 2.

Fatal cases.

1. M. S—, female, æt. 3 months. Wasted child, with abscess over right elbow. Sears on nates. On 2nd day abscess opened and drained; no communication with bone or joint. Arm greatly improved, but child died from inanition on 6th day. P.M.—Viscera normal. No sign of congenital syphilis.

2. R. J—, male, æt. 2. Emaciated child, with numerous offensive ulcers over right ear, back, and left shoulder. Offensive discharge from both nostrils. Two days after admission ulcers scraped. Treated with Hyd. ē Cret. Child died on 14th day. P.M.—Body much decomposed. No visceral lesions found.

Secondary.—Males 2. C. 2. Sore throat 2.

Tertiary.—Males 9, females 7. C. 6, R. 10. Gummata of skull and tibia 1. Laryngitis 2. Gummatoous glands of neck 2. Gummata of scalp 1, pharynx 1, thigh 1, elbow 1. Ulcers of palate 2, pharynx 1, leg 1, rectum 1, vagina 1, face 1.

Carcinomata.

Spheroidal-celled.—*Breast.*—Females 40. C. 35, R. 3, U. 2. Married 31. Family history of tumour 5, of tubercle 1. Shortest history 1 week; longest history 4 years.

Treatment.—Amputation of breast and clearance of axilla 38; pectorals divided 1; large part of pectorals removed 4; supra-clavicular glands removed 2; operation not advised 2; Thiersch's graft 1.

Complications.—Ulceration 1; secondary growth in liver 1; influenza 1.

Recurrent in scar.—Females 8. C. 2, R. 3, U. 3. Interval since operation: 2 months 1; 4 months 1; 7 months 1; 8 months 1; 10 months 1; 11 months 2; 4½ years 1. Colloid 1. Gland also affected 3.

Treatment.—Removal and clearance of axilla 1; removal 3; amputation at shoulder 1; thyroid 1; too advanced 2.

Recurrent in glands.—Females 5. R. 4, U. 1. Interval since operation: 1 month 2; 2 months 1; 9 months 1; 19 months 1. Supra-clavicular 2.

Treatment.—Removal 2; oöphorectomy 1; oöphorectomy with thyroid extract 1; antitoxin 1; too advanced 1.

Carcinoma of liver.—Female 1. D. 1.

Fatal.—M. A. E—, female, æt. 63. Patient noticed tumour of breast 4½ months before admission. Amputation of breast with clearance of axilla for scirrhus carcinoma performed 6 weeks before readmission. Patient admitted from convalescent home with general weakness; following day became delirious, and died on 2nd day. Urine contained one third albumen. P.M.—Liver riddled with secondary growth, very little normal liver substance remaining. Secondary growths also present in glands round the pancreas, but not elsewhere. Kidneys much decomposed, so that it was impossible to make out their exact condition, but capsules somewhat adherent.

Carcinoma of antrum.—Female 1. R. 1.

Treatment.—Excision of superior maxilla.

L. A—, female, æt. 43. Family history good. Three months before admission patient's nose began to bleed, without any apparent cause, from the left nostril; this was plugged, but the bleeding only stopped for a time, and continued with intermissions for two months. Soon afterwards she noticed a lump in the left nostril, which steadily increased in size up to the time of admission; slight discharge from nostril. On admission a large growth seen in left nostril, hard at its base, but quite soft in its upper part. Orbit and palate not affected. Excision of upper jaw on 11th day; antrum completely involved. Growth examined microscopically found to be spheroidal-celled carcinoma. Discharged on 17th day.

Carcinoma of nose.—Female 1. C. 1.

C. H—, female, æt. 75. Twelve years before admission patient had a growth removed from the bridge of the nose at this hospital. Growth thought to be of a sarcomatous nature. Ten years later, *i. e.* two years before readmission, growth recurred at the same place. On admission, a tumour over the bridge of the nose about the size of a walnut, extending to the inner canthus of the left eye and causing left upper eyelid to droop. Tumour moveable; no glands felt. Growth excised on 8th day. Pathologist reported that the growth was a spheroidal-celled carcinoma. Discharged cured on 17th day.

Carcinoma of orbit.—Female 1. R. 1. Readmitted with recurrence on account of facial neuralgia. Mental, supra-orbital, and auriculo-temporal nerves exposed, and osmic acid injected into them; pain relieved.

Carcinomatous glands of axilla.—A. H—, female, æt. 56. Two years ago left index finger amputated at this hospital for growth, which began under the nail. Growth examined by the pathologist and reported to be squamous-celled carcinoma. Eighteen months later, *i. e.* six months before admission, patient noticed a lump in the left axilla; this increased in size, and caused shooting pains down the left arm. On admission axillary glands enlarged, forming a mass the

size of an orange; skin adherent; tender on palpation; movement of arm impaired; no recurrence in stump. On third day glands excised. Patient discharged with wound healed on 27th day. Pathologist reported that the growth was a spheroidal-celled carcinoma.

Carcinoma of pylorus.—Males 4. R. 2, D. 2.

Treatment.—Gastro-jejunostomy 2. Pylorectomy 1, readmitted 11 months later, and gastro-jejunostomy performed.

Fatal cases.

1. R. P—, male, æt. 60. Labourer. For one year patient had been troubled with constant vomiting and pain in the left hypochondriac region; no haematemesis; rapid loss of weight; for 3 months able to take liquid nourishment only. On admission no obstruction in oesophagus; stomach much dilated; hard mass felt to the right of the mid-line just above the umbilicus; liver enlarged. No free hydrochloric acid in vomit. Operation on the 11th day. Growth found at the pyloric end, binding it down; glands enlarged with secondary growths in the liver; gastro-jejunostomy (anterior surface of stomach) by means of Allingham's bone-button, a continuous silk suture being applied through the opposed surfaces of the stomach and jejunum. Patient died 6 hours after operation. P.M.—Union of stomach and intestine quite sound, no leakage; stomach contained undigested food; a piece of meat obstructed the tube and prevented escape of the gastric contents into the bowel. Secondary growths in liver, and in the glands behind the lesser curvature.

2. F. B—, æt. 53. Agent. Strong family history of malignant disease. For 8 months attacks of abdominal pain at variable intervals; vomiting for one month; no haematemesis; no free hydrochloric acid in vomit; 1 stone in weight lost in 3 months. Operation on 6th day. Under the anaesthetic a mass felt on the right side of the abdomen just below the costal margin; incision through right rectus; a growth found involving pylorus; growth excised, $2\frac{3}{4}$ inches of stomach and 1 inch of duodenum being removed; stomach stitched up and duodenum implanted into posterior surface of stomach. Abdominal wound stitched in layers. Rectal feeding; vomited for 24 hours. Brand's essence by mouth on 2nd day. Small amounts of milk and barley water per mouth on 4th day. Uninterrupted recovery. Discharged on 45th day taking ordinary diet. Growth examined microscopically found to be spheroidal carcinoma.

Readmitted 11 months after discharge. Vomiting and pain had commenced three weeks before. On admission patient much emaciated and very feeble. Operation on 4th day. Anterior gastro-jejunostomy with double row of continuous silk sutures, the first row taking all three coats, the second the peritoneal and muscular only; stomach much bound down; infusion 3 pints; death on following day. P.M.—Gastro-jejunostomy junction good, no leakage; site of the excision of pylorus occupied by growth which had completely occluded the orifice of the implanted duodenum; sutures of former operation still *in situ*; mesenteric glands infected, no other secondary growths. Small amount of turbid fluid in lesser sac; no peritonitis.

Carcinoma of parotid.—Males 2. U. 2. Same case. Too advanced for operation.

Carcinomatous glands of neck.—Males 2. R. 2. Previous carcinoma of cheek 1; no primary growth found 1.

Treatment.—Excision 2.

Carcinoma of neck.—Male 1. U. 1. Too extensive for removal.

Carcinoma of cæcum.—Male 1. C. 1.

W. C.—, male, æt. 34. Porter. For 15 months patient had suffered from indigestion and flatulence. Two months before admission he noticed a lump in the lower part of his abdomen, just to the right of the mid-line; no vomiting or obstruction of bowel; no blood *per rectum*; pain in region of the lump 2 days before admission. Emaciation. Cœliotomy on 5th day through right semilunar line. Growth found to be involving the cæcum and beginning of the colon, omentum adherent, and whole mass fixed to anterior abdominal wall. Cæcum excised, colon closed by continuous silk sutures; end of ileum inserted into the side of the ascending colon, through longitudinal muscular band, and sutured with continuous silk sutures, the first row including all three coats, and the second peritoneum and part of the muscular coat. Recovery uninterrupted except for slight discharge from wound on 5th day. Bowels opened 4th day after operation. Discharged on 36th day. Growth examined after removal, found to be annular, but lumen of gut not entirely closed. Appendix not affected. Microscopically, spheroidal-celled carcinoma, ? endothelioma.

Carcinoma of larynx.—J. W.—, male, æt. 55. Groom. Patient noticed a lump the size of a pigeon's egg on the left side of the neck, just below the lower jaw, one month before admission. On admission a hard, firm mass the size of a small orange in left submaxillary region; skin not involved; voice thick; laryngoscopically the larynx seen to be pushed over to the right, the right cord being invisible.

Operation on 6th day. Mass found to surround left common carotid artery, which was ligatured above and below the growth, the intervening portion being removed with the growth. Growth attached to thyroid cartilage. After operation patient collapsed; difficulty in breathing; tracheotomy on 7th day; great relief; steady improvement in general condition. On 18th day left side of larynx excised; pharynx opened and plugged. Fed by means of tube in œsophagus; pulse weak; breathing laboured. Right hemiplegia on 21st day; steadily got weaker; broncho-pneumonia on 25th day; patient became unconscious and died on 32nd day. P.M.—A considerable amount of firm white growth extended along the trachea. Lower lobe of each lung consolidated by extensive, confluent, septic broncho-pneumonia. No secondary deposits of growth. Left cerebral hemisphere and basal ganglia soft and semi-diffuse, occipital lobe and right side of brain normal; small clot occluded the anterior communicating artery, and a non-adherent clot found at the bifurcation of the basilar artery.

Growth examined by the pathologist stated to be spheroidal-celled carcinoma of doubtful origin.

Carcinoma of floor of mouth.—Male 1. C. 1.

Treatment.—Excision with part of the tongue.

*Columnar.**Duct carcinoma of breast.*—Females 2. C. 2.

1. M. A. F—, female, æt. 49. Married. One child. Three months before admission patient had pain in left breast; 3 weeks later she noticed a small lump just below the nipple; no discharge from nipple. On admission tumour the size of a walnut, which on movement dragged on the nipple; skin not infiltrated; tumour moveable over pectoral muscle; nipple not retracted; no enlargement of glands; amputation of breast with clearance of axilla on 6th day; uninterrupted recovery; discharged cured on 16th day. Tumour examined microscopically found to be columnar carcinoma.

2. J. C—, female, æt. 37. Single. Dressmaker. Patient fell downstairs 2 years before admission, and severely bruised herself; shortly after she noticed a small lump in her right breast, which slowly increased in size until 3 months ago, when it increased rapidly; no discharge from nipple. On admission a hard tumour in right breast; skin adherent; nipple retracted; glands in axilla; pain down the arm; tumour freely moveable over pectoral muscle. Operation on 6th day, amputation of breast with clearance of the axilla, a large amount of skin removed, so that edges could not be brought together; Thiersch grafts being applied at time of operation; a few fresh grafts applied on 20th day to parts where previous grafts had not taken. Discharged cured on 25th day. Examined microscopically, columnar-celled carcinoma; glands not infected.

Carcinoma of stomach.—Males 4. R. 1, U. 1, D. 2.*Treatment.*—Gastro-jejunostomy 3. Cæliotomy 1.*Fatal cases.*

1. C. W. W—, male, æt. 33. Police constable. History of occasional vomiting and pain in the abdomen for 6 months; pain so severe that it kept patient awake; rapid loss of flesh; patient much worse for last 3 weeks before admission, vomiting nearly everything he took. On examination stomach found to be dilated; no mass felt in region of pylorus. Patient's stomach washed out daily with only slight improvement for 7 days. Operation on 8th day; incision through left linea semilunaris; stomach along the greater curvature and in pyloric region infiltrated with malignant growth; glands enlarged; anterior gastro-jejunostomy performed with continuous silk suture; rectal feeding; milk by mouth, one ounce at a time on 10th day, and amount gradually increased, beef tea, jelly, and nutrient powder being gradually added; wound healed and stitches removed on 15th day; patient began to be sick again on 16th day, stomach washed out, abdomen slightly distended and tender; patient rapidly grew worse, and died on 17th day. P.M.—General peritonitis; pin-hole aperture found on the greater curvature two inches to the right of the site of gastro-jejunostomy, which was perfectly successful. Very little stenosis of pylorus from the growth, but much compression from glands outside.

2. F. J—, male, æt. 23. Stoker. Admitted with fifteen months' history of pain in abdomen and vomiting, which had become more and more frequent; no haematemesis; loss of weight; a hard mass felt in the epigastric region, 4 inches below costal margin; stomach washed out; transferred from Medical side. Operation on day of transfer; incision in mid-line; soft growth invading stomach,

chiefly at pyloric end ; anterior gastro-jejunostomy with continuous silk suture ; rectal feeding ; peptonised milk by mouth on day after operation, but on account of constant sickness discontinued on 2nd day, and patient on rectal feeding only until 6th day, when small quantities of peptonised milk again given ; this steadily increased until he was taking 2 pints on 12th day. Vomiting returned again on 14th day, and patient gradually got weaker, and died on 16th day. P.M.—Growth completely surrounded the stomach for 3 inches from the pylorus ; growth half-inch thick ; ulcerated. Anastomosis firm, and orifice easily admitted finger, but stomach contained a pint of fluid. Glands behind stomach enlarged ; no secondary growths.

Carcinoma of cæcum.—Males 2, female 1. R. 1, U. 1, D. 1. Obstruction in two cases.

Treatment.—Enterotomy, followed by lateral anastomosis and excision of growth 1; enterotomy for relief of obstruction 1; abdominal exploration 1.

A. L. W.—, female, at. 25, married. Attacks of pain, with vomiting at intervals, for three months ; lump felt in the right iliac fossa one month before admission. Admitted with slight distension of abdomen, and some visible peristalsis. Operation on 2nd day. Incision in mid-line below umbilicus ; small intestine much distended ; mass felt in right iliac region ; rectus muscle divided transversely ; growth found in cæcum, which was brought to the surface and fixed there, a Paul's tube being tied into the small intestine. Progress satisfactory. On 9th day after first operation growth was excised, the cut ends of the bowel being closed by invagination, and lateral anastomosis between the ileum and ascending colon performed by Halstead's method. A mesenteric gland also removed. Bowels opened naturally on 4th day after operation. Feeding by mouth immediately after operation. Discharged on 39th day, having steadily improved from time of operation ; bowels regular. Readmitted three months later on account of constipation, with pain in right iliac region. On 16th day after readmission symptoms of obstruction appeared ; operation performed, old incision being opened up ; recurrence of growth found in small intestine, and extending on to posterior abdominal wall ; lateral anastomosis by Halstead's method performed between ileum and transverse colon ; bowels open naturally on 3rd day after operation ; patient improved for a time, but later gradually lost flesh ; bowels relaxed ; went home on 63rd day.

Fatal case.

M. E.—, male, at. 52. Plasterer. Constipation three weeks. Admitted with acute obstruction. Immediate operation ; mid-line incision. Second incision in right iliac region ; growth felt in cæcum, which was brought outside the abdomen, glass rod being passed through mesentery. Paul's tube tied into lower end of ileum ; patient died from exhaustion a few hours later. P.M.—Cæcum constricted by a scirrrous mass, which was entirely outside the mucous membrane ; it had sealed off the veriform appendix, which was distended with thick inspissated muco-pus. No secondary growths.

Carcinoma of ascending colon.—Male 1, females 3. R. 1, U. 2, D. 1.

Treatment.—Anastomosis of ileum and transverse colon 1. Exploration 3.

Fatal case.

S. S.—, female, æt. 45. Pain in right side of abdomen, diarrhoea and vomiting at intervals for six months. A large, firm, irregular tumour extending from one inch below right costal margin to one inch above right anterior superior spine, and inwards as far as the mid-line. Second tumour felt in the pelvis, attached to other by narrow cord.

Exploration on 2nd day; tumour found to consist of matted intestines, involving small intestine, cæcum, and ascending colon; on attempting to separate them it was found that growth involved them to a large extent, and had ulcerated through in places, so abdomen closed. Patient died a few hours later. P.M.—It was found that the matted intestines formed the wall of an abscess, caused by the ulceration of the growth through the intestinal wall; abscess cavity the size of a cocoa-nut. Growth had ulcerated through jejunum and also cæcum. No secondary growths in other viscera.

Carcinoma of transverse colon.—Females 4. R. 3, U. 1. One case readmitted twice.

Treatment.—Colotomy 1; readmitted, treated medicinally; 2nd readmission, lateral anastomosis of ileum to colon, with closure of artificial anus. Exploration 1.

J. K.—, female, æt. 51, married. Admitted on Medical side with acute obstruction and history of constipation for ten days, with attacks of vomiting. Mid-line incision, obstruction found to be in region of hepatic flexure; Paul's tube tied into cæcum, incision having been made in right inguinal region. Obstruction relieved; small amount of faeces *per rectum*; patient discharged relieved to a convalescent home. Readmitted one month later complaining of looseness of stools; treated with haematoxylin and charcoal, and on 18th day sent to convalescent home again. Readmitted a fortnight later, and lateral anastomosis of ileum to transverse colon performed with continuous silk sutures; faeces passed *per rectum* next day, but some still passed through the artificial anus; this was closed nine days later, discharge ceased for a time, but reappeared on 14th day after attempt at closure; this gradually ceased, and at time of discharge on 56th day only a small sinus remained.

Carcinoma of splenic flexure.

J. J.—, female, æt. 55, single. Constipation for six months, no blood or mucus *per rectum*; vomiting for twelve days; bowels opened slightly by aperients and enemata; abdomen much distended on admission. Operation on day of admission; median incision below umbilicus; circumscribed growth felt in splenic flexure; lateral anastomosis by Halstead's method between transverse and descending colon. Bowels acted freely immediately after operation; feeding by mouth; steady improvement. On 23rd day growth excised, the cut ends of colon being invaginated and stitched with Lambert sutures of silk. On third day after operation patient complained of pain on left side of abdomen; vomiting on 4th day; patient gradually grew worse, and died on 6th day. Growth examined microscopically found to be columnar-celled carcinoma. P.M.—General peritonitis, pools of pus lying between the intestinal coils, while faecal matter was escaping from both ends of the colon; previous anastomosis sound. Secondary growths in liver.

Carcinoma of sigmoid flexure.—Males 3, female 1. C. 1, R. 1, U. 1, D. 1
Obstruction 3; readmitted 1.

Treatment.—Left inguinal colotomy 2. Colotomy with excision of growth followed by anastomosis 1. Exploration with view to removal of growth 1.

G. A. M.—, female, æt. 45, married. History of habitual constipation; a fortnight before admission vomiting commenced, with abdominal pain; no blood passed *per rectum*. On admission abdomen much distended and somewhat tender; no tumour felt in abdomen or *per rectum*.

Operation on day of admission; mid-line incision below umbilicus; moveable mass felt in sigmoid region; second incision in left iliac region, mass brought to the surface and found to be growth; bowel above and below the growth clamped and growth excised, a Paul's tube being tied in to each end, and bowel stitched to surface. Median incision sutured in layers. On following day slight sickness from anaesthetic, patient otherwise well. Paul's tube removed on 3rd day. Patient made steady improvement. A clamp was applied on several occasions to the septum between the ends of the gut and caused a good deal of pain, but progress was slow and the part clamped appeared to be getting thicker. Four months after first operation lateral anastomosis performed; incision in left linea semilunaris, anastomosis between colon just above and below artificial anus; double row of continuous silk sutures; posterior row continuous Lembert; then the bowel opened, and continuous stitch put in to include all the coats and close opening; continuous Lembert to complete circle, placed about $\frac{1}{3}$ inch from opening. Patient did well after operation, but faecal matter still passed through artificial anus, so thirteen days later a stout silk ligature was passed from the artificial anus through the opening in the bowel made at the last operation and tied loosely, and the artificial anus then closed. Patient discharged with small faecal fistula. Patient seen six months later had secondary growth in liver; operation site satisfactory; occasional aperients required. Growth examined microscopically found to be columnar-celled carcinoma.

Fatal case.

A. W.—, male, æt. 40, labourer. Transferred from Medical side with nine months' history of abdominal pain, diarrhoea, and occasional passage of blood *per rectum*, vomiting one day; distinct mass felt in left iliac region, extending towards mid-line. Abdominal exploration, mid-line incision, large growth the size of a cocoanut found occupying the pelvis, intestines adherent to it and in parts implicated in it, impossible to separate them; a coil brought to the surface and fixed there but not opened. On day after patient much collapsed, both legs œdematos. Death on 2nd day. P.M.—Behind colon was a mass the size of a cocoa-nut. Colon involved found to be sigmoid flexure, and it was removed with the mass. On section an epitheliomatous ulcer was found surrounding the colon for 2 inches from rectum; no constriction; growth had infiltrated posterior wall of sigmoid, and the areolar tissue was extensively affected. The mass consisted of infected retro-peritoneal lymphatic glands, which pressed on the sigmoid and caused obstruction.

Carcinoma of rectum.—Males 12, females 13. C. 6, R. 12, U. 3, D. 4. Recurrent 4.

Duration above one year.—Eighteen months 2; 2 years 4.

Treatment.—Left inguinal colotomy 12; excision of rectum 7; Kraske's method 3; excision preceded by left inguinal colotomy 1.

Fatal cases.

1. T. H—, male, æt. 48. Milkman. Two years' history of blood and mucus *per rectum*, occasional diarrhoea, pain on defaecation. *Per rectum* a large ulcerating growth felt, extending nearly round the bowel, except on anterior surface; much infiltration of underlying tissues. Operation on 9th day. Rectangular incision over sacrum, and flap turned down. Coccyx and one segment of sacrum removed; bowel separated and pulled down; growth excised, cut end being brought down and stitched to the skin. Retention of urine; rise of temperature; vomiting; gradually increasing exhaustion; death on 3rd day after operation. No P.M.

2. M. S—, female, æt. 46, cook. Great pain in left side of abdomen for eighteen months, with rapid loss of flesh; pain much worse for last four days; occasional diarrhoea; no blood *per rectum*; no sickness. Mass felt *per rectum*. Operation on 5th day. On opening abdomen sero-purulent fluid found, with flakes of lymph on the intestines; abdomen irrigated with sterilised water; left inguinal colotomy, but bowel not opened. Death within an hour. P.M.—General peritonitis, lymph throughout the abdomen and on the upper surface of liver. No pus. Appendix normal. Carcinomatous growth in upper part of rectum, causing a tight stricture; at the point of stricture mucous membrane much ulcerated, and immediately outside was a blackened cavity of some standing, walled in by dense adhesions among the intestinal coils, and due to perforation of rectum by growth.

3. W. K—, male, æt. 70, sawyer. Diarrhoea with abdominal pain, and occasional passage of blood *per rectum* for one year. On examination a hard growth almost completely encircling the bowel felt immediately within the anus, upper limits easily defined. Operation on 10th day. Incision round anus, carried back to the tip of the coccyx and forwards into the perineum; growth excised, neck of bladder wounded, rectum brought out and sutured below the coccyx. Catheter tied in. Wound plugged. Following day temp. 104°; rigor; rapid pulse; patient collapsed. No vomiting. Death on 3rd day. P.M.—Growth found to be completely removed; no secondary growths; no infection of peritoneum. Small granular kidneys. Extreme emphysema of lungs.

4. J. R—, female, æt. 48, married. Blood and mucus *per rectum* on and off for twelve months. Tenesmus and abdominal pain. Loss of flesh. On admission abdomen distended; peristaltic movements visible at times. *Per rectum* a large hard mass felt about 2 inches from the anus, upper limit not felt, growth fixed. Left inguinal colotomy on 3rd day; glass rod passed through mesentery; bowel not opened till two days later, a Pavl's tube being tied in. Patient very restless; nothing passed through colotomy except flatus. On 4th day after operation tube removed and bowel further opened; a large amount of faecal matter passed after castor oil. Gradual exhaustion, with death on 10th day. P.M.—Some recent peritonitis along the coils of intestine in neighbourhood of colotomy. Rectum from its commencement to about 1½ inches from the anus infiltrated with malign-

nant growth, chiefly on posterior wall. Large involvement of tissues outside the rectum and of the glands. Secondary deposit in liver on lower surface of right lobe and upper surface of left. Early hydronephrosis of left kidney.

Carcinoma of thyroid.—Females 2, same case. R. 1, U. 1.

Treatment.—Thyroid extract. Partial thyroidectomy.

Squamous.

Carcinoma of scalp.

E. P.—, female, æt. 59. Patient for years had had several small tumours on the top of her head; these she had treated by cauterising for 2 or 3 days with nitric acid, and the tumour had then shelled out. Seven years ago one appeared on the left side of the head, gradually increased in size, and about 6 years ago began to discharge. The tumour has gradually increased in size, and spread over the top of her head. On admission patient had a crater-shaped growth over the upper part of her head; it was 7 inches in size in the sagittal axis, and 6 inches in the coronal; it was raised about 2 inches above the level of the scalp. The surface of the tumour was fungating over the greater part, the discharge being very offensive. Occipital glands enlarged. Operation on 9th day; rubber tourniquet fixed round the head, and incision made right round the tumour and scalp raised from the skull; central portion found to be very adherent, and was removed with portion of pericranium; skull under this portion found to be honey-combed, the outer table alone being affected. This was scraped with sharp spoon and sanguinaria paste applied; bleeding stopped by pressure and by stitches passed through the edge of the scalp. Wound granulated over, and on patient's discharge on 79th day had healed except just in the centre. Growth examined microscopically found to be squamous-celled carcinoma.

Carcinoma of cheek.—Male 1, females 4. C. 2, R. 3.

Treatment.—Excision in all.

Carcinoma of lip.—Males 9, female 1. C. 9, R. 1. Upper lip 1, lower lip 9. Recurrent 3.

Treatment.—Excision in all.

Carcinoma of nose and pharynx.—Male 1. U. 1.

Treatment.—Nil.

Carcinoma of tongue.—Males 11, females 3. C. 8, R. 3, U. 1, D. 2.

Treatment.—Partial excision 7. Complete excision 5. Exploration 1. *Nil* 1. Removal of glands 4. Ligature of lingual 1. Kocher's operation 2. Laryngotomy 1. Division of jaw 1.

Fatal cases.

1. G. A.—, male, æt. 71. Labourer. White papule noticed on dorsum of tongue 12 months before admission; this gradually grew until 9 months later it had appeared on under surface of tongue, and later the surface became much ulcerated. On admission extensive growth on left side of the tongue, ulcerated with indurated edges, painful on under surface. Operation on 15th day. Tongue divided down the middle and left half excised, a wide margin being given behind the growth. Patient did well for a time, but later developed broncho-pneumonia, and died on 48th day. No P.M.

2. F. F.—, male, æt. 45. Police constable. History of syphilis. Fracture of

angle of right lower jaw 12 years before admission. Two months ago noticed throbbing and pain behind the angle of right side of lower jaw; this was followed by pain shooting up behind his ear, and became so bad that patient could not eat solid food. Four days ago patient noticed a lump at the back of his tongue, and consulted a doctor, who sent him to the hospital. On admission an extensive ulcerating growth was found at the base of the tongue on the right side, with indurated glands in the submaxillary region. Tongue fixed and could only be protruded slightly. Operation on 4th day. Incision from the right angle of the mouth passed down to $\frac{1}{2}$ inch below the jaw, and then back to the angle of the jaw; jaw divided. Growth found to be invading right tonsil, and much too extensive for removal. Wound became very septic, and temperature rose immediately after operation. Broncho-pneumonia. Just before death on 23rd day patient had rigors with twitchings of right side of face, and complete loss of power of left side of the body. Complete unconsciousness; breathing stertorous. Temperature 108°. P.M.—Growth found at the back of the tongue on right side, extending on to the tonsil and the base of the epiglottis. Glands along jugular vein infiltrated. Right lung emphysematous and oedematous. Left solid everywhere except at the apex; at the base of the upper lobe was a gangrenous abscess cavity, the size of a Tangerine orange, and several smaller abscesses also seen. Brain healthy except for oedema of the meninges.

Carcinomatous glands of neck.—Males 4. R. 3, U. 1. Previous epithelioma of tongue 1, lip 1, cheek 1. Primary growth not found 1.

Treatment.—Excision 3. Nil 1.

Carcinoma of floor of mouth.—Males 4, females 2. R. 4, U. 1, D. 1. Recurrent 1.

Treatment.—Excision 1; after division of jaw 1; with removal of portion of jaw 3.

Fatal case.

G. C. B.—, male, æt. 68. Traveller. For 3 months had noticed a small hard sore on the right side of the frenum linguae; this had increased in size, and at the time of admission was firmly attached to the lower jaw; pain only on protruding the tongue; no glands felt. Operation on 5th day. Jaw divided in mid-line, growth separated from jaw, and excised with portion of tongue, the cut edges being united with silk sutures; jaw sutured with silver wire. Patient steadily improved, and at time of discharge on 30th day wound was quite healed except for pin-point sinus under chin. Union of jaw weak. Growth examined microscopically found to be squamous-celled carcinoma. Readmitted 1 month later with recurrence in floor of mouth and discharging sinus under the chin. Operation 7 days later. Old incision down to chin opened up and jaw divided; bone found to be necrosed, and on left side growth firmly attached; about 2 inches of bone removed. Tongue drawn forward, and anterior half removed. Submaxillary glands excised on left side. Patient rather collapsed after operation, but quickly recovered, and continued to improve until the 7th day after operation, when signs of broncho-pneumonia appeared, and he died on the 11th day. No P.M.

Carcinoma of palate.—Males 4, female 1. R. 4, U. 1. Recurrent 1.

Treatment.—Excision 4.

Carcinoma of tonsil.—Males 6. U. 6.

Treatment.—Nil.

Carcinoma of alveolar border.—Males 4, females 2. C. 1, R. 3, U. 2. Recurrent 2. Upper jaw 2, lower jaw 4.

Treatment.—Excision with portion of jaw 3; of upper jaw 1.

Carcinoma of pharynx.—Male 1, female 1. U. 2.

Treatment.—Nil.

Carcinoma of larynx.—Male 1, female 1. R. 1, D. 1.

Treatment.—Tracheotomy 2.

Fatal case.

J. H.—, female, æt. 61. Widow. For 4 months patient had had difficulty in breathing and in swallowing, and had noticed a change in her voice. For 2 months she had noticed some swelling of her neck. On examining her throat a growth was seen invading the aryepiglottic fold, and encroaching on the right half of the larynx. Tracheotomy on the 2nd day. Broncho-pneumonia; death on 5th day. P.M.—A large sloughy new growth on the aryepiglottic fold, and invading right wing of thyroid cartilage. Vocal cords intact. Extensive broncho-pneumonia in both lungs. Heart dilated and fatty. Valves competent, but aortic valves fringed with peculiar feathery appendages. Liver cirrhotic. Parenchymatous nephritis.

Carcinoma of œsophagus.—Males 7, females 2. R. 6, D. 3.

Situation of growth.—Nine inches from teeth 4; 10 inches 1; 14 inches 1; lower end 2; upper end 1.

Treatment.—Gastrostomy 9. Tracheotomy 1.

Fatal cases.

1. L. L.—, male, æt. 49. Clerk. Difficulty of swallowing for 5 weeks. Sudden onset of symptoms, and later gradual increase, so that on admission even liquids were only swallowed with difficulty. Rapid loss of flesh. Obstruction to bougie 10 inches from teeth. Gastrostomy by Albert's method on 5th day. Fed by stomach and rectum every 4 hours. On 13th day after operation wound became inflamed, with pain and some distension of abdomen. Death 2 days later. P.M.—A probe could be passed from wound straight into peritoneal cavity, adhesions having given way. Septic general peritonitis, with a considerable collection of fluid around the spleen, shut off from general cavity; no free gas. Lungs showed patches of aspiration broncho-pneumonia, and also small nodules of new growth. Bronchial and mediastinal glands infiltrated with growth. œsophagus invaded by growth 2 inches below the cricoid, the growth being on the anterior surface, and the size of a big bean. Half an inch below this was an ulcer with heaped-up edges and ragged base, which almost encircled the tube, and measured 3 inches in length. No actual narrowing of the gullet.

2. C. P.—, female, æt. 65. For 8 months difficulty in swallowing, which gradually increased, so that for 6 months fluids only taken. Blood vomited on one occasion. Difficulty in breathing. Progressive emaciation. Obstruction to bougie 12 inches from teeth. Gastrostomy by Albert's method on 7th day, but stomach not opened till 4 days later, patient being fed in the meantime by rectum, with small quantities of milk by mouth. Irregular fever after opera-

tion, with much cough and expectoration. Pulse rapid and weak. Death on 29th day. P.M.—From level of bifurcation of trachea, extending upwards for 2 inches, oesophagus was involved in carcinomatous ulceration; at the lower part of the ulcer was a circular opening in the anterior wall, which led into a space below the tracheal bifurcation. This space appeared to have been originally occupied by glands which had broken down, and the contents were puriform. Lungs engorged at bases. Pericardium contained half a pint of thin pus, both layers being coated with lymph; no communication found between collection of pus below tracheal bifurcation and pericardium. Heart wasted, otherwise healthy. Nothing abnormal in abdomen.

3. A. B—, male, æt. 58. Labourer. Patient's father and mother both died of oesophageal obstruction. For 5 months patient had had difficulty in swallowing, much worse for 2 months. Definite thickening felt at the back of the larynx; bougie passed 9 inches from teeth. Much emaciation. On 5th day patient taken to the theatre for operation, but while the anæsthetic, chloroform, was being administered, patient, after struggling slightly, suddenly stopped breathing, and though artificial respiration and other measures were tried; he did not recover. P.M.—Malignant growth found in the oesophagus, extending from the bifurcation of the trachea down to the cardiac orifice of the stomach. Glands behind oesophagus involved. Growth pressed on left bronchus, but the wall was not involved. Heart flabby, but otherwise normal. No secondary growths.

Carcinomatous glands of groin.—Males 3. R. 2, U. 1. Previous carcinoma of scrotum 2. Primary growth not found 1.

Treatment.—Excision in two cases.

Carcinoma of scrotum.—Male 1. R. 1. Glands involved.

Treatment.—Excision. Glands too advanced for removal.

Carcinoma of penis.—Male 1. R. 1. Glands involved.

Treatment.—Amputation of penis, with removal of glands on both sides.

Carcinoma of bladder.—Males 4, female 1. R. 2, U. 3. Recurrent 1. Vesical calculus 1.

Treatment.—Excision 1; supra-pubic cystotomy 1.

Carcinoma of ovary.—Female 1. D. 1. Obstruction 1.

Treatment.—Cœliotomy and right colotomy 1.

Fatal case.

J. R—, female, æt. 43. For five months patient had felt pain in the lower part of the abdomen, with attacks of vomiting, which usually came on about half an hour after food, and almost invariably relieved the abdominal pain. Vomit occasionally contained blood. Constipation, and for a week before admission patient had not had her bowels opened. On admission abdomen distended and slightly tender. In the right hypochondriac region there was a hard mass, fixed, and slightly tender. Operation on 4th day. Incision in right linea semilunaris; the pelvis found to be one mass of growth, while a large cake-like mass felt on the hepatic flexure, with numerous smaller masses on other parts of the intestine. Ascending colon stitched to abdominal wall, and opened two days later; patient gradually got weaker, and died on 6th day. P.M.—A ring of malignant growth on the hepatic flexure of the ascending

colon, forming a stricture which barely admitted the tip of the finger. Right ovary almost completely occupied by nodules of new growth, most of which showed some colloid degeneration; it was enlarged to the size of the normal kidney. Left ovary in similar condition, but somewhat smaller. Uterus of normal size, with small nodule of growth in right cornu. Secondary growths in liver.

Carcinoma of cervix uteri.—Female 1. U. 1.

Treatment.—Nil.

Carcinoma of kidney.—Female 1. D. 1.

Fatal case.

E. S.—, female, at. 49. For ten years patient had suffered from severe attacks of pain in the right hypochondriac region, coming on suddenly, lasting, as a rule, for three or four hours, and then disappearing suddenly. Pain was localised, and did not radiate in any particular direction, but was so severe that it caused patient to vomit and to writhe in agony. No blood passed in urine after the attacks. For last two months patient had noticed a swelling in right lumbar region, which she thought varied in size from time to time; no connection noticed between the size of the tumour and the quantity of urine passed. Occasionally profuse sweating at night. On admission a rounded tumour felt in the right lumbar region, the lower edge reaching just below the level of the umbilicus. A band of resonance present over the tumour, and an impulse obtained through the tumour, between the hand in front of it and the one behind. Liver felt two inches below the costal margin, the surface being distinctly nodular. Urine acid, trace of albumen; no sugar. Microscopically many pus cells, a few degenerated renal epithelium cells, but no casts, and a large number of transitional epithelial cells. No tubercle bacilli. Operation on 7th day; lumbar incision; kidney exposed, and a trocar inserted; much pus found. Incision then made to allow of introduction of finger; pelvis of kidney much dilated, and its walls thickened and irregular; no stone felt. Cavity washed out and drainage-tube inserted. Wound dressed daily and syringed out, but as after six weeks there was no improvement a second operation was performed, the old wound was opened up, scraped, and iodoform injected; temporary improvement for short time, but patient steadily got weaker, and died five months after admission. P.M.—The right kidney was replaced by a brownish-white substance, which obliterated all trace of kidney tissue with its divisions into pyramids and cortex, although the outline of the kidney was preserved. The kidney was adherent to the right lobe of the liver, and here the growth had broken through the capsule and invaded the liver for the depth of nearly an inch. Near this spot were other secondary growths of liver. No growths found in other viscera. Examined microscopically, growth found to be squamous-celled carcinoma.

Carcinoma of hand.—Male 1. C. 1.

Treatment.—Excision of growth.

Carcinoma of arm.—Female 1. U. 1. Previous removal of epithelioma from axilla.

Treatment.—Nil.

Carcinoma of leg.—Male 1. D. 1. Pneumonia.*Fatal case.*

J. W.—, male, æt. 67. Printer. For five years before admission patient had noticed a swelling just below the left knee, which had gradually become larger, and then ulcerated through the skin. On admission there was a fungating growth just below the knee, three inches in diameter, with hard and everted edges, the growth being raised about one inch above the surrounding skin. A small piece excised and examined microscopically found to be squamous-celled carcinoma. No glands in groin. Patient developed pneumonia, and died eighteen days after admission. P.M.—Upper lobe of right lung solid and airless, the middle and lower lobes congested and short of air, but not solidified. Lower lobe of left lung partially collapsed; upper lobe œdematos. Marked arterio-sclerosis. Heart dilated and hypertrophied.

Rodent ulcer.—Males 3, females 2. C. 5. Erysipelas 1; diphtheria 1.

Situation.—Eyelid 1, cheek 2, scalp 1, groin 1.

Treatment.—Excision 5, grafted 1.

Rodent ulcer, recurrent.—Males 3, females 2. C. 1, R. 4. Removal two months 1, three months 2, seven months 1, thirteen months 1.

Treatment.—Excision 5, grafted 1, plastic 1, injection of carbolic acid 1.

Sarcoma.

Sarcoma of naso-pharynx.—Males 6. R. 4, U. 2. 1 case readmitted three times.

Treatment.—Excision 4, tracheotomy 1.

Sarcoma of orbit.—Male 1. D. 1.

Fatal case.

F. W.—, male, æt. 42. Fitter. A small swelling was noticed below the right ear five months before admission; it grew rapidly, and extended upwards and into the neck, where glands became enlarged. Two months before admission an incision was made into the mass at another hospital, and some pus said to have been got out; glands in the neck excised. The glands soon reappeared, and the swelling over the eye increased. On admission there was a marked fluctuating swelling over the right eye; right cheek and right side of neck much swollen, and discharging sinuses present. Operation on 5th day. An incision was made over the right orbit; much pus evacuated. The cavity was found to extend as far back as the optic nerve, and the bony roof of the orbit was quite destroyed, the membrane of the brain being exposed. The sinuses of the neck and cheek were scraped. Portions of the breaking-down growth examined microscopically found to be round-celled sarcoma. Growth rapidly increased. Gradual failure. Death on 35th day. P.M.—Fungating mass projecting from right orbit, which extended on to the brow; bone bared and rough, but thickened at this point. The orbital plate of the frontal bone was almost absorbed, the frontal lobe being compressed, but the dura not actually involved. Breaking-down glands on the right side of the neck. No other growths. Quiescent tubercle in both lungs.

Sarcoma of cheek.—Females 2. R. 2. Same case recurrent 3 months later. Round-celled.

Treatment.—Excision.

Sarcoma of superior maxilla.—Male 1, females 3. C. 2, U. 2. Myeloid 2.
Not determined 2.

Treatment.—Excision of upper jaw 2.

Sarcoma of pituitary body.—Male 1. D. 1. Cirrhosis of liver.

Fatal case.

F. F.—, male, æt. 36. Beer retailer. Patient after a heavy drinking bout was lying on a sofa, when he suddenly became comatose. He was brought to the hospital moribund, and died shortly after admission. No previous history could be obtained. P.M.—A sarcoma, the size of a pigeon's egg, was found occupying the position of the pituitary body; the optic commissure was stretched over it anteriorly, and both it and the optic nerves were softer than normal. A depression corresponding to the tumour in the interpeduncular space. Brain otherwise normal. Small secondary nodules in spleen. Heart flabby; valves competent. Multilobular cirrhosis of liver.

Interstitial nephritis.

Sarcoma of parotid.—Male 1. U. 1.

Treatment.—Nil.

Sarcoma of undescended testicle.—Male 1. R. 1.

W. W.—, male, æt. 38. Poultreter. For 6 years has suffered from attacks of abdominal distension, relieved by castor oil. The attacks recurred about every 6 months. Present attack started 5 weeks before admission with pain in left hypochondriac region. No vomiting. On admission abdomen distended, with marked tenderness in right iliac fossa and in left hypochondriac region. No tumour could be felt. Abdomen moved well on respiration. Shifting dulness in both flanks. Testicle on left side absent from scrotum. Bowels opened by enema. Tapped on Medical side, and 65 ounces of straw-coloured fluid removed. Transferred to Surgical side. Operation. Under the anaesthetic a large tumour could be felt, chiefly in right side of abdomen, but extending across to the left. Incision through right rectus muscle; a large encapsulated, friable tumour felt. The tumour was drawn out of the abdomen, and was found to be attached to the left iliac fossa, and also to the extra-peritoneal fat in the region of the bladder. These attachments were transfixed, ligatured, and divided. The abdominal cavity was sponged out, and on examination growth was found to invade the pelvis and the abdominal wall. Wound closed in layers. On examining the tumour it was found to consist of a mass the size of a small round football, with a smaller mass about the size of a Tangerine orange projecting at one side; into this the vas and some veins ran. The larger mass was breaking down, and contained in its centre laminated blood-clot. The smaller mass, examined microscopically, was found to be round-celled sarcoma with no testicular tissue, and was evidently a portion of the sarcoma which had fungated through the tunica albuginea. The vas was small and very tortuous. Patient made an uninterrupted recovery, and was discharged relieved on 32nd day.

Sarcoma of ovary.—L. B.—, female, æt. 21. Admitted on the Medical side for pain in the right hypochondriac region and abdominal distension, which she had noticed for 6 weeks. Pain intermittent in character. Menstruation regular. On admission abdomen much distended, with shifting dulness in both flanks;

otherwise nothing abnormal found in abdomen. Two days later abdomen was tapped, and much straw-coloured fluid removed; the abdominal pain was increased after tapping. Transferred to Surgical side for operation. Under the anaesthetic a large tumour could be felt in the lower part of the abdomen. Incision in the mid-line below the umbilicus; a large quantity of blood-stained fluid escaped. Tumour found to be an enlarged solid ovary; the pedicle was ligatured and the growth removed. Wound sutured in layers. Patient had constant vomiting for two days after operation, but after this ceased recovery was uninterrupted, and she was discharged cured on 29th day. Pathologist reported that tumour was a round-celled sarcoma.

Sarcoma of thyroid.—W. C.—, male, æt. 54. Clerk. Swelling of right side of neck noticed 20 years before admission, and of left side for 3 years; swelling on both sides had much increased for 2 months. Difficulty in breathing. On admission, thyroid gland much enlarged, outline irregular, no fluctuation, larger on the right side than on the left; transverse diameter $8\frac{1}{2}$ inches. Operation day after admission. An attempt made to remove growth, but it was found to infiltrate the surrounding tissues. Tracheotomy therefore performed. Trachea found to be pulled over to the right of the mid-line, and 2 inches of thyroid had to be cut through to reach it. König's tube inserted. Breathing relieved. Tube changed on 6th day, and a rubber one inserted. Troublesome cough, with much expectoration. Breathing gradually got worse, and patient became weaker, dying on 39th day. Pathologist reported growth to be spindle-celled sarcoma. P.M.—Growth limited by the capsule of the gland; glands in the anterior mediastinum enlarged with foci of new growth. In the left posterior triangle was a large mass of growth, arising in glands, which had reached the size of a turkey's egg. Secondary growth in the manubrium, which was almost absorbed, a thin sheet of bone only being left. Both lungs contained numerous secondary growths, chiefly in the upper lobes. Heart hypertrophied. Liver and kidneys fatty. Brain normal.

Sarcoma of scapula.—G. W. W.—, male, æt. 24. Sawyer. History of injury to shoulder 2 years before admission. No history of syphilis. For 9 months had noticed swelling above the right scapula; swelling had increased, and pain had developed in it sufficient to prevent sleep. On admission, tumour extended from the clavicle in front to the spine of the scapula behind; firmly attached to the scapula, but not to the clavicle; skin moveable over it. Arm freely moveable; shoulder-joint not involved. The tumour was deep to the trapezius, but bulged out between the edge of this muscle and the sterno-mastoid. Nothing abnormal in axilla. Nothing abnormal detected in chest. Operation on 15th day. Incision made from vertebral end of spine of scapula outwards to the outer end of clavicle, and then along the upper surface of clavicle to the junction of middle and inner thirds, and then upwards into the neck; trapezius found to be adherent to tumour, so portion removed. Tumour separated from spine of scapula with ease, but found to be adherent at the junction of the spine and acromion process, a portion of the latter being removed. Tumour also somewhat adherent along the outer third of the clavicle, but was torn off with the periosteum. Upper cords of brachial plexus exposed, but had

not been invaded. Patient suffered slightly from shock, but next day felt quite well; no pain. Wound dressed 5 days after operation; some collection of blood under flap, which had commenced to slough at one corner. Wound healed in 14 days. Patient had difficulty in flexing his head towards the right shoulder, but could raise his right arm over his head. Right arm slightly weaker than left. Discharged cured on 33rd day. Pathologist reported tumour to be a spindle-celled sarcoma.

Lympho-sarcoma of neck.—Male 1. R. 1.

Treatment.—Excision, but found impossible to remove entire growth.

Sarcoma of kidney; nephrectomy.—T. C.—, male, æt. 67. Market gardener. For years patient had had attacks of pain in the left lumbar region; for 3 months had been very severe, radiating down to the testis, and accompanied by haematuria. Frequency of micturition, especially at night. At times passed very little urine, sometimes not passing water for over 12 hours, and then very little in amount. On admission a large mass was felt in the left lumbar region. Urine strongly alkaline, but contained no albumen, blood, or pus. Operation on 5th day. Lumbar incision, kidney exposed, trocar and cannula inserted, nothing found; opening in kidney enlarged, but nothing felt. Haemorrhage profuse. Wound plugged with cyanide gauze, and patient sent back to bed. Haemorrhage continued, and 5 hours later patient again taken to the theatre; much clot found, and haemorrhage profuse; kidney brought outside, growth felt on posterior surface; kidney excised. Patient much collapsed. Infusion 2 pints, with saline solution *per rectum* every 2 hours. After the operation patient had complete suppression of urine; he gradually became more and more drowsy, with an occasional fit of restlessness. Bowels opened twice on 3rd day after aperients, but no urine passed after operation up till his death on 4th day after. P.M.—Wound quite healthy. On examining the site of the other kidney it was found to be occupied by a large mass of fat. On carefully unravelling this a small fibrous sac, firmly adherent to the surrounding fat, found in the centre. The sac, which was evidently the remains of a dilated pelvis, held about an ounce of fluid. At one point at the lower end was a small nodule of kidney substance the size of a pea. Ureter normal. No calculus found in either pelvis, ureter, or bladder. No growth in other organs. Abdominal glands unaffected.

Fibro-sarcoma of finger.—M. 1. C. 1.

Treatment.—Excision.

Sarcoma of pelvis.—Females 2. D. 2.

Fatal cases.

1. L. R.—, female, æt. 30. Sixteen months before admission multilocular ovarian cyst removed. Patient admitted with abdominal distension, and pain chiefly in the left iliac fossa. Shifting dulness in both flanks. Exploration on 5th day. A large amount of fluid found in peritoneum, while occupying the pelvis, and adherent to the old scar in the abdominal wall, was found a large mass of new growth, which it was impossible to remove. A small portion cut off and examined microscopically found to be round-celled sarcoma. Fluid quickly re-collected in peritoneal cavity, and 12 days later patient tapped, 71

ounces being withdrawn. Growth rapidly increased, and patient gradually got weaker, dying on the 39th day. P.M.—Abdominal viscera inextricably bound up in adhesions. Peritoneum full of minute growths. Liver contained 2 small masses of growth near the free edge of the right lobe. All the tissues in the neighbourhood of the uterine appendages infiltrated with new growth. Kidneys healthy. Spleen somewhat enlarged, with thickened capsule.

2. M. A—, female, æt. 13 months. Child quite well until 3 weeks before admission, when mother noticed swelling on right buttock. No history of injury. Screaming fits. Difficulty in defæcation. On admission, a tense, indistinctly fluctuating swelling on right buttock. No pulsation. Movements at hip-joint free, and apparently painless. Strong haemophilic history in family. Four days after admission swelling appeared in pelvis. Operation decided on, but child died while anaesthetic (chloroform) was being administered. P.M.—Large sarcomatous growth found springing from ilium; this extended beneath glutens maximus, and surrounded the base of the bladder and rectum. Bladder much distended. Right ureter distended, and slight dilatation of pelvis of right kidney. No secondary growths.

Sarcoma of hip.—F. K—, male, æt. 16. Cashier. For 10 months had noticed pain in the right hip and knee, especially at night. Walks with a limp. On admission, right leg flexed and apparently lengthened, but no actual lengthening; great trochanter on right side more anterior than on left; marked tenderness on pressure over the right hip in front. In right buttock is a tense painful swelling, which fluctuates and obliterates fold of nates. Temperature 101·6°. Skiagram taken; nothing definite shown. After rest in bed for 3 weeks hip became less painful and swelling somewhat smaller; but at end of 5th week swelling in buttock increased and became more painful, the temperature at the same time rising to 102°. Operation. Incision over great trochanter, and trochanter trephined; the bone found to be diseased and the posterior surface of the neck of the femur eroded. Gauze drain inserted; stirrup extension put on leg. A considerable amount of discharge. A fortnight later counter-opening made 1½ inches behind previous incision; a large abscess cavity found. Discharge still continued undiminished; offensive at times. Three weeks later an abscess developed in front of the joint; this was opened, irrigated, and drained. Some of the scrapings microscoped showed only necrosing granulation tissue. Discharge continued unchanged. Double Thomas's splint applied, but had to be removed on account of pain. Three and a half months after admission the hip became very swollen and inflamed; fresh incisions made and the old sinuses reopened, but without improvement, and the patient's general health much worse. Five days later patient insisted on going out, although in a very weak condition. Readmitted 9 days later very collapsed, with wounds in a very dirty condition, discharging most offensive pus. Incontinence of urine and faeces. Patient very irritable and at times violent, so that a porter was necessary. Death 6 days later. P.M.—Under the skin, in front of the right hip-joint, was an elastic swelling nearly as large as a cricket ball; this, when cut, proved to be firm white growth, but from whence it originally sprung it was impossible to say. Head of femur entirely detached from shaft at the junction of the neck with

the great trochanter. No growth found in or attached to the bones, and the separated surface was carious and worm-eaten. Pus around the joint had tracked over the dorsum ilii and down the front of the thigh. Examination of other parts of the body not allowed. Growth examined microscopically found to be round-celled sarcoma.

Sarcoma of femur.—Males 4; female 1. C. 2, R. 2, U. 1. Endosteal 2, periosteal 3, giant-celled 2, round-celled 1. Recurrent 1.

Treatment.—Amputation at hip-joint 1; through middle of thigh 2; Coley's fluid 1; *nil* 1.

Sarcoma of tibia.—Male 1, females 2. C. 2, R. 1. Parosteal 1; periosteal 2. Spindle-celled 2. Chondrifying 1.

Treatment.—Amputation of thigh in lower third 3.

W. C.—, male, æt. 24. Barman. For 4 months patient had noticed a small hard lump on the inner side of left leg just below the knee; this had considerably increased in size, and had been tender for 2 months. On admission there was a hard swelling, the size of a hen's egg, on the inner side of the upper end of the left tibia, while behind, projecting into the popliteal space, was a smaller swelling. No pulsation, no fluctuation; no glands in inguinal region. Amputation at junction of middle and lower thirds of thigh on 7th day; anterior and posterior flaps. Suppuration. Patient discharged on 56th day without signs of recurrence. On examining the leg after amputation the growth was found to arise from the outer tuberosity of the tibia, and to extend in front of the inner tuberosity to the inner side of the thigh; behind the growth arose between the tuberosities. Radiating striae of bone into the growth. No infiltration of muscles detected. Microscopically found to be chondrifying sarcoma undergoing calcification.

SIMPLE TUMOURS.

Calcifying adenoma of back; excision.—J. W.—, male, æt. 53. Railway porter. For thirty years had had a slowly growing tumour in the left sacral region, which had much increased in size during the last two years. It commenced as a small tumour the size of a pea; four weeks before admission the tumour burst, and had been discharging freely ever since. On admission a large purplish tumour found in the left sacro-iliac region, the surface of which was ulcerating in two places. Tumour limited by sharp margin; discharge very offensive. Operation on 10th day, incisions made around tumour, which was firmly adherent to subjacent muscular structures, and tumour removed. Skin brought together with much difficulty. Six days later stitches gave way, and wound burst open. Much pus. Blister grafting at end of four weeks. Discharged cured on 40th day. Pathologist's report.—Keratinising epithelial tumour undergoing calcification—the so-called calcifying adenoma of Malherbe.

Adeno-sarcoma of breast.—A. C.—, female, æt. 40. Married. Hard lump noticed in right breast behind the nipple for twelve months; the size of a shilling when first noticed, slowly increased in size; painful for a few days only. On admission a hard flattened swelling, 3 inches in diameter, situated behind the nipple of the right breast. Nipple slightly retracted. Skin non-adherent. Small

painful gland felt at lower border of the pectoralis major. Breast non-adherent to the pectoral. Amputation of breast, with clearance of the axilla on 5th day. Healing by first intention, discharged cured on 17th day. Tumour examined microscopically reported to be adeno-sarcoma, gland not infected.

Papilloma of bladder.—E. M.—, female, æt. 29. Intermittent haematuria for eleven months, with increased frequency of micturition and pain. Haematuria used to occur about every three weeks, and lasted on an average three days. Increase of symptoms for six weeks. Examination of bladder by cystoscope revealed a shadow on the anterior wall a little to the right of the mid-line; the posterior wall was free. Supra-pubic cystotomy with removal of the growth, the base being scraped with a sharp spoon. Bladder stitched up and dropped back into the pelvis, a tube being left in the pelvic tissues in front of the bladder, and a self-containing catheter inserted into the urethra. On 7th day urine escaped through supra-pubic wound, with a considerable amount of pus, but gradually decreased in amount and ultimately ceased, the patient being discharged on 30th day with only a small superficial sinus above the pubes.

Bony tumour of brachialis anticus.—L. L.—, female, æt. 21. School teacher. Seven weeks previously patient had fallen off her bicycle, falling on to her elbow, which was dislocated but reduced by her doctor; as she did not regain full mobility of the joint she came to the hospital. On admission elbow could only be extended to angle of 120° , and flexed to angle of 90° . Pronation and supination normal. A hard bony mass felt in front of the lower end of the humerus, but not attached to it. From skiagram taken tumour thought to be in muscle, clearly seen not to be attached to humerus. Operation on 9th day. Oblique incision over the tumour from within outwards; tumour found to be in the inner half of the brachialis anticus, median nerve implicated but separated from it. The bony part of the tendon of insertion was excised with difficulty, and the anterior ligament of the elbow-joint was partially removed. Muscle and tendon united with silk sutures. Wound suppurred. Secondary haemorrhage on 22nd day. Brachial artery ligatured 1 inch above its bifurcation, a ligature being placed above and below the ulceration. Wounds gradually closed. Passive movements under nitrous oxide. Discharged on 90th day with slight impairment of movement in elbow-joint.

CYSTS.

Cystic epithelial tumour of jaw.—C. H.—, female, æt. 34. Married. Tumour noticed on left side of the gum of lower jaw for twelve months; first appeared after swelling in connection with a bad tooth; tooth removed, swelling disappeared, but tumour remained. Other teeth since removed on account of pain in gum. Tumour grew slowly until two months before admission, when it began to increase rapidly in size. On admission there was a hard swelling on the left side of the lower jaw, extending from the first bicuspid to the last molar. The inner surface of the tumour is cystic, the outer hard and bony; no egg-shell crackling. Partial excision of lower jaw on 8th day, the whole of the left half of the jaw being removed, tumour being thought to be sarcoma. Nasal feeding. Discharged with wound healed on 22nd day. Pathologist reported tumour to be a cystic epithelial tumour (soft odontoma).

Hydatid.

1. R. A—, male, æt. 44. Ostler. Hydatid of liver. Served eight years in the army in India, where he had enteric fever. No history of syphilis. Ten months before admission patient noticed pain in his abdomen, and later felt a small lump about the size of his thumb in the left side below the ribs. This lump has gradually increased in size, and for the last five months patient has had pain and vomiting after almost every meal. No haematemesis. Jaundiced for one week. Two stones in weight lost in eighteen months. On examination a definite tumour felt in the epigastrium, extending from the middle line about 3 inches to the left, and from the costal margin 1½ inches downwards; it is freely moveable. Liver dulness begins at fifth rib and extends 1 inch below costal margin; edge easily felt, quite smooth. Stomach much dilated, extending downwards to within 2 inches of umbilicus; no splashing. Stomach washed out, and test meal given. No free hydrochloric acid found. Potassium iodide given without effect. Patient ceased vomiting after admission. Operation on 14th day. Mid-line incision above the umbilicus. Tumour found to be in the lower border of the left lobe of the liver, and on its surface was a hard white plaque having the appearance of cartilage, around which was an area of fluctuation. Cyst stitched to the abdominal wall, and packed round with gauze. Three days later cyst punctured, and a drainage-tube put in. Hooklets and scolices of *Tænia echinococcus* found in fluid. Twelve days after first operation the anterior wall of the cyst removed, a large quantity of daughter cysts, débris, and blood-stained fluid being evacuated; on introducing the finger the cyst was found to communicate with a further cavity, which extended below the right lobe of the liver. Wound dressed, no tube. Much shock after operation. Discharge gradually ceased, and patient went to a convalescent home on 91st day with a small sinus.

2. F. H—, female, æt. 34. Hydatid cyst of thigh. Nine years previously hydatid cyst of thigh incised and drained; this ultimately healed up. Two years later another cyst appeared in the same place, and has been gradually increasing in size; no pain, but foot and leg swell when she walks or stands for a long time. On examination a large, soft, semi-fluctuating tumour on the inner side of the right thigh; veins over this enlarged. No glands in groin. Operation on 7th day. Incision made over the swelling, cyst found to be deep to the rectus muscle; cyst wall dissected out and stitched to the skin. On opening the cyst a large number of daughter cysts escaped. Cyst irrigated, and a gauze drain inserted. A few more daughter cysts came away twenty-three days later. Patient discharged with wound healed on 42nd day.

Ovarian cysts.—Females 5. C. 5. Twisted pedicle 1.

Treatment.—Ovariotomy 5.

Parovarian cyst.—Females 1. C. 1. Twisted pedicle 1.

Treatment.—Ovariotomy.

Tumours, nature undetermined.

Tumour of liver.—H. P—, female, æt. 43. Married. Mass noticed in the region of the umbilicus six months before admission, which had gradually increased in size. Occasional pain. No vomiting. Bowels regular. Slight loss of flesh. No

aundice. On examination near the mid-line of the abdomen, sometimes slightly to the right, sometimes to the left, in the epigastric region, was a firm, non-elastic, freely moveable tumour, which caused some prominence of the recti muscles. Mass moved with respiration, and its dulness was inseparable from that of the liver. Exploratory cæliotomy revealed a firm whitish-grey tumour involving the right lobe of the liver, and extending across the fissure on to the wall of the stomach, probably malignant. No other signs of growth found. Incision closed. Discharged on 19th day.

Tumour of chest wall.—F. R., male, aet. 23. Labourer. Twelve months before admission patient noticed intermittent attacks of pain in left side of chest occurring every two or three weeks. Nine months later a swelling was noticed below the left clavicle; this had gradually increased in size. No difficulty in breathing; no cough. No history of syphilis. On examination a hard swelling was felt, extending from the first to the third ribs on the left side. Percussion note dull over it. No fluctuation. Pectoral muscles moveable over it. Breath-sounds at the left apex weaker than the right, and the percussion note around the tumour not so good as on the opposite side, but no positive evidence of involvement of lung. Treated with injections of Coley's fluid, but without improvement. Iodide of potassium also given, and patient went out for a month, taking iodide of potassium. On readmission tumour found to have increased considerably, extending towards the axilla and being more prominent. Three days later a portion of the growth was excised for microscopical examination, and the report returned by the pathologist stated that there was no evidence of sarcoma. Three weeks later there were signs of the involvement of the upper part of the left lung. The axillary glands were swollen, and both liver and spleen enlarged. Examination of the blood revealed nothing except leucocytosis. Coley's fluid again given and large doses of iodide of potassium, but without benefit. Pains in the legs developed so severely that injections of morphia had to be given. Tumour was continuing to increase in size at the time of patient's discharge.

DIGESTIVE SYSTEM.

Hernia.

Reducible inguinal.—Males 160, females 12. C. 159, R. 9, U. 4. Congenital 10; funicular 3; infantile 2; double 20; recurrent 14; undescended testis 6; varicocele 5; phimosis 2; hydrocele 5; morbus cordis 2; delusions 1; pyæmia 1.

Treatment.—Bassini's operation 46; Kocher's 27; Macewen's 34; Halstead's 1; ablation of sac and suture of pillars 43; Foster's 6; truss 9; refused operation 4; removal of appendix 1.

Irreducible inguinal.—Males 13. C. 10, R. 2, U. 1. Double 1; varicocele 1; reducible on other side 1.

Treatment.—Bassini's operation 4; Kocher's 3; Macewen's 1; ablation of sac and suture of pillars 2; hot bath 1; truss 1; "at own request" 1.

Reducible femoral.—Males 3, females 7. C. 10. Double 2. Hydrocele 1.

Treatment.—Ablation of sac with suture of Poupart's ligament to pectenous fascia 8; sac twisted and brought through Poupart's ligament 2.

Irreducible femoral.—Male 1, females 7. C. 8.

Treatment.—Ablation of sac with suture of Poupart's ligament to pectenous fascia 7; ligation of sac 1; removal of appendix found in hernial sac 1.

Reducible ventral.—Females 2. C. 2. Previous cœliotomy 1. Sac ablated and abdominal wall sutured in layers 2.

Irreducible ventral.—Male 1, females 3. C. 4. Previous cœliotomy 1. Sac ablated and abdominal wall sutured in layers 4.

Irreducible umbilical. Females 7. C. 4, R. 2, U. 1. Inflamed 1. Sac ablated and abdominal wall sutured in layers 4. Truss 2.

Reducible lumbar.—Male 1. C. 1. Previous nephrectomy. Suture of abdominal muscles in layers.

For *Strangulated hernia* see Special Table I.

Acute appendicitis.—Males 14, females 9. C. 17, D. 6. Abscess in fossa 8; in loin 1; opening into bladder 1; empyema 1; subphrenic abscess 1; empyema and subphrenic abscess 1; general peritonitis 9.

Treatment.—Incision of abscess 7; removal of appendix 7; cœliotomy and removal of appendix with irrigation 9.

Vide 'Medical Society's Transactions' for 1900 for three cases of general peritonitis with recovery. For other cases *vide* 'Medical Report.'

Gangrenous appendicitis; abscess; subdiaphragmatic abscess; recovery.

C. H.—, male, æt. 6. Admitted for intestinal obstruction, but found to have well-marked signs of appendicitis and local abscess. Temperature 101°. Pulse 120. Incision made parallel to Poupart's ligament, and foul pus evacuated. Appendix contained a faecal concretion, and was gangrenous at its base; appendix removed. Rubber drainage-tube inserted. Five days later patient still had tenderness in right flank, while the note over the right lung behind was impaired up to the seventh rib, the breath-sounds over the dull area being diminished. Liver dulness commenced at fifth rib in nipple line. Temp. 101°. Patient had an irritative cough, and pain in the right shoulder. Two days later, as the area of dulness had increased, an incision was made just below the right costal margin by the tip of the ninth rib; a finger was introduced and an exploration made in all directions, but only recent adhesions were found. The child still continued to go downhill with irregular temperature reaching to 102°, pulse between 120 and 130, and respirations 32, while the signs at the base of the right lung increased, so on the 18th day after first operation the ninth rib was excised from the posterior axillary line down to its costal cartilage, and the incision carried down into the abdomen. The diaphragm was found pushed up against the ribs with a perforation in its lower part, and a large abscess containing 15 oz. of pus, lying partly above and partly below the diaphragm, was evacuated. On exploring the abscess cavity it was found that it extended over the upper surface of the liver as far as the coronary and falciform ligaments, while behind it reached the kidney. A drainage-tube and cyanide gauze were put into the cavity, and the wound partly stitched up as the right lobe of the liver bulged into it. The temperature dropped quickly and remained down for ten days, when it began to rise again, while the pulse went up to 160. Dulness was also found to extend up to the fourth rib; a portion of this was excised; no pus discovered,

but the diaphragm was found to be in contact with the inner surface of the ribs at this spot, and a few days later there was profuse discharge from this wound. Boy afterwards steadily improved; wounds contracted up so as to cause no inconvenience. Abdominal belt given. Discharged cured on the 144th day.

Fatal cases.

1. C. M.—, male, æt. 21. Chemist. Patient admitted complaining of acute abdominal pain, vomiting, and constipation. On examination abdomen rigid and acutely tender, especially in the right iliac fossa; some distension; temp. 101·8°. Immediate operation. Incision through right rectus, pus in general peritoneal cavity; appendix found with its apex directed downwards and inwards towards the pelvis, with a perforation near its base. Appendix removed. Pus also found behind the peritoneum in right iliac fossa. Intestines turned out on to the abdomen, and irrigated with sterilised water. Keith's drainage-tube inserted. Patient had constant abdominal pain, injection of morphia $\frac{1}{4}$ gr. given, and repeated five hours later. Next day vomiting was profuse, oxalate of cerium gr. j every two hours given without any benefit. Temp. 101°. Pulse 148. Patient steadily got worse, and died on the day following. P.M.—General adhesive peritonitis found over the whole abdominal cavity; pus found in the right iliac fossa, and spreading upwards in the line of the ascending colon. The whole thickness of the peritoneum along this line was infected, and pus lay behind it and had infiltrated to a slight extent the superficial portion of the muscles. The lower end of the right kidney was affected, this portion of its capsule having thick pus adherent to it both in front and behind. Internally this portion of the kidney showed signs of necrosis. No other collection of pus present. Other organs normal.

2. P. E.—, male, æt. 36. Labourer. Patient in hospital one year ago for empyema of right side of chest. Readmitted with pain in right iliac fossa; temp. 101°. Four days later sickness commenced, abdomen became painful all over and very rigid; operation same day. Incision in right linea semilunaris. Pus found all over the peritoneal cavity, appendix gangrenous, and part had sloughed off. Peritoneal cavity irrigated with sterilised water, and intestines turned out and sponged. Keith's drainage-tube left in. Vomiting continued for twenty-four hours, then ceased. Ol. Ricini given on 2nd day. Tube removed on 3rd day. Patient steadily improved till 12th day, when signs of fluid in right side of chest began to appear; two days later a rib was resected and much pus evacuated; drainage-tube inserted. Abdominal wound still discharged pus. On 26th day patient seized with acute pain in the abdomen, and became much collapsed, temperature falling to 95°, but under the influence of hot thoracic fomentations and morphia he gradually improved. Discharge from empyema still profuse; next day abdominal discharge somewhat more profuse. Temperature still rose at night to 102°. Discharge from abdominal wound gradually lessened, but that from the empyema still continued profuse, and patient gradually got weaker and weaker, dying on the 49th day. P.M.—Both lungs studded with tubercles, and adherent to chest wall; cavity in left upper lobe. Diaphragm not perforated. Peritoneum studded with tubercles, and intestines much matted. Small tuberculous ulcers in cæcum only.

3. T. B—, male, æt. 32. Carman. Patient admitted with marked signs of general peritonitis, with history pointing to appendicitis as the origin. Immediate operation. Incision through right rectus muscle; peritoneum full of pus, and intestines matted together. Appendix, which had perforated near the base, was removed. Abdomen thoroughly irrigated with sterilised water, intestines being turned out. Patient much collapsed, and died on the following day. P.M.—General adhesive peritonitis, the adhesions in many places being quite tough; patches of lymph were present, but no pus in any part of the abdomen. Stump of appendix watertight.

4. A. W. H—, æt. 29. Tin-plate worker. Admitted with history of diarrhoea and vomiting for 1 week, with pain in right iliac fossa for 3 days. On admission abdomen rigid and much distended, and very tender on palpation. Temp. 102°. Immediate operation. Incision in mid-line. Much dark fluid found in peritoneal cavity, with pus in right iliac fossa and in the pelvis; lymph on the intestines. Incision made at right angles to 1st incision; appendix, which was gangrenous near its base, was removed. Intestine punctured in 4 places, and magnesium sulphate injected into bowel. Peritoneal cavity washed out with sterilised water, and a plug inserted into the right iliac fossa. Stimulants given hypodermically and *per rectum*, but patient died on following day. P.M.—The whole peritoneal surface deeply injected with flakes of lymph on the visceral surface. Little blood in the peritoneal cavity, but no pus. Thoracic viscera healthy.

5. F. H—, male, æt. 20. Shop assistant. Second attack of appendicitis. Present attack commenced 4 days before admission, when abdomen was much distended and rigid, with marked tenderness, especially in right iliac fossa. Temp. 99·6°. Immediate operation. Incision in mid-line, followed by 2nd in the right iliac fossa; large abscess found round the cæcum. No general peritonitis. Appendix not removed. Median incision sutured, and drainage-tube inserted into lateral incision. Patient made good recovery except for small faecal fistula, which appeared a fortnight afterwards, but rapidly closed, and patient discharged cured. Three months later patient readmitted with fresh abscess in right iliac fossa, which was opened, washed out, and appendix removed. For 4 days patient improved, but on 5th day abdomen became distended, and vomiting commenced, temperature rising to 101·2°. Old wound was opened up, and part of small intestine found to be strangulated by peritoneal adhesions; these were divided and abdomen closed. Patient steadily got worse, and 4 days after operation a septic rash developed on face and arms, death occurring 2 days later. P.M.—General peritonitis present, the intestines being universally adherent to one another. Small pockets of pus and thick lymph were present at many spots among the adhesions. Broncho-pneumonia in both lungs.

6. A. K—, female, æt. 16. Folder. Illness started 5 days before admission with sickness and abdominal pain. Constipation for 3 days. Admitted with well-marked general peritonitis. Immediate operation. Incision through mid-line. Gut much distended and inflamed, with lymph adhering to it. Offensive pus in peritoneal cavity, especially in right iliac fossa. Small intestine incised, and contents evacuated. Tip of appendix found to have sloughed. Appendix not removed; peritoneal cavity irrigated with sterilised water, a gauze plug and

tube being left in for drainage. Death on following day. P.M.—General peritonitis, secondary to abscess round veriform appendix, which was closely applied to the cæcum and outer part of ascending colon. Last inch of appendix dilated, with perforation at the junction with the rest of appendix. Evidence of old abscess tracking up the colon, but shut off from liver by adhesions. Lungs oedematous.

Chronic appendicitis.—Males 30, females 7. C. 32, R. 4, U. 1. First attack 18; 2nd 7; 3rd 4; 4th 3; 5th 1; 12th 1; not stated 3.

Treatment.—Incision adopted, McBurney's 27; through sheath of rectus 6; semilunar line 2. Appendix showed old perforation 2; concretions 2; stricture 6; catarrhal in remainder. Abscess 5.

W. N—, male, æt. 42. Clerk. Two previous attacks; last attack 1 month before admission. A definite mass had been felt, but had gradually got smaller. On admission a hard mass felt in right iliac fossa, not moving on respiration, and tender on palpation. Operation on 5th day. McBurney's incision. Small abscess found behind the cæcum; intestine much matted, and in separating the adhesions a rent was made in the cæcum; this was sutured. Appendix not found. Cyanide drain left in. Vomiting for 24 hours after operation. On 8th day faecal discharge from wound. Two days later counter-incision made in the loin. Faecal discharge continued, and on 27th day a lateral anastomosis performed between transverse colon and ileum with fine silk sutures. Discharge of faeces still persisted, so three days later anaesthetic given and hole in cæcum sutured. This a few days later broke down again, and though wounds got gradually smaller, a large amount of faecal matter still passed from both wounds. On 79th day abdomen again opened in mid-line, and the ileum was then divided between the cæcum and the lateral anastomosis; this checked the faecal discharge to a large extent, but a little still came away, and the fistula, though getting smaller and smaller, was still present at the time of discharge on 105th day.

Strangulation by band.—Males 2, females 2. C. 2, D. 2.

Fatal cases.

J. W—, male, æt. 37. Dealer. Six months previously had been operated upon in this hospital for appendicitis and general peritonitis; since then had always had difficulty with his bowels. On day before admission had been seized with great abdominal pain, accompanied with shivering. Had gradually got worse until time of admission early next morning. On admission patient much collapsed, with constant vomiting. Temp. 95°; pulse rapid and feeble. Abdomen distended and tender. Death in a few hours. P.M.—Coils of bowel firmly fixed to old abdominal scars, but allowing of movement. Many adhesions also between coils of gut in the pelvis, and by one of these adhesions a coil had been strangulated, the coil being a loop of 10 inches of ileum about 4 feet from ileo-cæcal valve. About half a pint of blood-stained fluid in the peritoneal cavity. Oedema of both lungs, with calcareous deposits at apex.

Z. J. V—, male, æt. 22. Railway porter. In 1898 patient admitted for radical cure of hernia; this was followed by haemorrhage from omentum, cœliotomy being performed. Patient readmitted 6 months after for obstruction. Cœliotomy. Gut found adherent to scar, and portion of small intestine found to

be strangulated by bands of omentum; these were divided after ligature, and the abdomen closed. General peritonitis, with death on 7th day. P.M.—Wound healed on surface, but deep parts suppurating. Pus found in central and lower parts of peritoneal cavity. Stomach much dilated. Lungs emphysematous.

Matting of intestines.—Males 2, female 1. C. 1, D. 2.

A. J.—, male, æt. 60. Two years previously cœliotomy performed for obstruction due to matted coils of intestine in an old hernial sac; these were reduced, but adhesions could not be separated on account of their strength. Obstruction relieved, and patient had no trouble with his bowels until a few days before admission. Bowels relieved by enemata, but patient still suffered with vomiting. Operation on 9th day. Three or 4 feet of small intestine found firmly matted together; lateral anastomosis performed between the coils above and below. Rectal feeding for 3 days. Aperient on 9th day. Discharged cured on 37th day.

Fatal cases.

1. W. Y.—, male, æt. 72. Admitted with obstruction of several days' duration; abdomen much distended; constant vomiting. Scrotal hernia on left side. Incision in mid-line; matting of small intestine, but colon much distended. No evidence of growth. Left inguinal colotomy, a Paul's tube being tied in; much gas escaped, but little faecal matter. After operation vomiting continued, and patient died 2 days later. P.M.—Intestine 6 feet from the stomach matted together to such an extent as to cause considerable obstruction to flow of the contents; adhesions very firm. Faecal matter in colon above colotomy opening, although the passage was quite free. Left kidney enlarged, and contained numerous small abscesses in cortex. Prostate enlarged; cystitis.

2. C. H. C.—, female, æt. 47. Dressmaker. Ovariectomy performed at this hospital 1 year before admission. For 4 days patient had had intestinal obstruction, with constant vomiting and abdominal pain. Abdomen much distended. Immediate operation. Incision through mid-line. Small intestine much matted together, so as to cause obstruction. Adhesions broken down and intestines replaced. Patient much collapsed. Saline *per rectum*, but patient died a few hours after operation. P.M.—Coils of intestine found to be generally adherent; adhesions easily broken down; omentum firmly adherent along the anterior surface of ascending colon, but was not dragged into the pelvis. No lesion of stomach or intestines found. Both ovaries had been removed.

Strangulation of bowel by uterine fibro-myoma; general peritonitis.

M. A. M.—, female, æt. 43. Admitted for intestinal obstruction; much collapsed; constant vomiting; abdomen much distended. Temp. 98·2°. Pulse 120, very weak. Patient taken immediately to theatre. Incision in mid-line, and much offensive brown fluid evacuated; as the intestines were being drawn out patient collapsed, and died on the table. P.M.—General peritonitis, but no evidence of faecal extravasation; the lower part of the ileum found in the pelvis behind a large fibro-myoma of the uterus, and so pressed upon as to cause obstruction, but no sign of pressure necrosis. Internally intestine much inflamed, and 9 inches above ileo-caecal valve was a small linear ulcer, which immedately gave way when the intestines were washed out. Besides numerous fibro-my-

mata of uterus, there was old salpingitis present on each side. Other organs healthy.

Perforated duodenal ulcer.—M. 1, C. 1. *Vide Clinical Society's Transactions,* 1900.

Ulcerative colitis.—Females 3. R. 1, U. 1, D. 1.

Fatal case.—M. S—, female, æt. 31. For 3 weeks patient had suffered with diarrhoea and pain on defæcation. Hæmorrhage *per rectum* for about 10 days. On attempting to examine rectum, pain was so great that it was found to be impossible to do so. Anæsthetic given, when numerous small nodules felt all round the rectum as far as the finger could reach; these nodules were ulcerated, friable, and bled easily. External sphincter much relaxed. Various drugs tried without effect. One month after admission left inguinal colotomy performed, but bowel not opened; patient much collapsed, and died next day. P.M.—The entire length of the colon and rectum extensively diseased; the whole of the mucous membrane, with the exception of a few sinuous and œdematosus islets, had disappeared, leaving a glistening cicatricial surface. The portions of mucous membrane left in the rectum were arranged longitudinally, and at first sight looked like thrombosed piles; higher up the arrangement was more transverse, and appeared to correspond to the ridges between the sacci of the colon. Peritoneum healthy. Kidneys fatty, their cortices being swollen and dull white. Other organs healthy.

Maldevelopment of descending colon.—F. 1, C. 1.

M. F—, female, æt. 21. Nurse. All her life patient had been troubled with constipation, and for 5 years had been obliged to have an enema every other day in order to get her bowels to act. For last few years had had constant pain in abdomen, chiefly in left inguinal region, and this became much worse whenever her bowels failed to act, but was always relieved after bowels were opened. Two years before an abdominal exploration had been performed at another hospital, when it was found that the descending colon was much smaller than normal, but nothing was done. Operation on 13th day. Incision through left rectum; descending colon brought to the surface, and found to be the size of one's little finger. This condition extended from near the lower end of the hepatic flexure as far as the upper part of the sigmoid. Lateral anastomosis performed between the lower part of the hepatic flexure and upper part of sigmoid, a continuous silk suture being used. Flatus passed during night following operation. Bowels opened on 7th day after castor oil. Uninterrupted recovery. Patient discharged on 41st day, being free from pain, and her bowels acting regularly by the aid of an occasional aperient.

Stricture of rectum.—Males 2; females 4. C. 2, R. 3, D. 1.

Treatment.—Excision 1. Linear proctotomy 2. Dilatation 1. Left inguinal colotomy 2.

Fatal case.—M. M—, female, æt. 39. Married. For 30 years patient had suffered with stricture of rectum, and during that time had had several operations at different hospitals, the last being linear proctotomy 9 years before admission. After the operation bougies were passed regularly, and patient had no difficulty in defæcation until 2 years ago, when she omitted to pass the bougies

for some months, and then found that the passage had contracted. Since then defæcation had become more and more difficult, and at the same time she had had constant attacks of vomiting and diarrhoea, with abdominal pain. On admission a hard nodulous stricture felt 2 inches from the anus; lumen small, and only just admitting the tip of the finger. Operation on 8th day: lower 3 inches of rectum excised, and the cut edge was drawn down and sutured to the skin. Excised portion examined microscopically, but no evidence of malignant disease. After the operation patient much collapsed. Death on 2nd day. No P.M.

Cholelithiasis.—Males 4, females 10. C. 10, R. 1, U. 1, D. 2.

Treatment.—Cholecystotomy 9. Cholecystotomy and choledochotomy 3. Medicinal 1. Operation not advised on account of aortic disease 1.

E. S—, female, æt. 21. Machinist. Attack of biliary colic 6 weeks before admission, which lasted for 6 days; attack accompanied by vomiting and slight jaundice. On admission a hard cylindrical mass felt in right hypochondrium, extending to level of umbilicus; not moving with respiration, but moveable from side to side, and from behind forwards. Urine and faeces not altered. Vomiting and pain after admission. Operation on 20th day; incision in right semilunar line; gall-bladder much distended and adherent to abdominal wall. Gall-bladder brought out of wound, packed round with gauze, and opened; a large number of small stones evacuated. Gall-bladder stitched to abdominal wall, a tube put into it, and a ganze plug packed round to shut off peritoneum. Progress satisfactory. Discharged with small sinus on 59th day.

F. M—, female, æt. 28. Married. Two years before had been in hospital for appendicitis; had had similar attacks 5 or 6 years before. A fortnight before admission she had pain in the right hypochondrium, accompanied with vomiting; no jaundice. On admission a hard, moveable swelling felt below the right costal margin, and reaching to near the umbilicus. Urine and faeces unchanged. Operation on 3rd day. Incision in right linea semilunaris; gall-bladder brought to the surface and incised; several ounces of bile and mucus evacuated, with many small stones; one large stone lodged in the cystic duct, and removed with difficulty; gall-bladder stitched to abdominal wall, and drainage-tube inserted. During operation appendix was examined, and found to contain a small concretion, which was easily pushed back into the cæcum. Uninterrupted recovery. Patient discharged on 37th day with wound healed.

Fatal cases.

I. H. C—, male, æt. 35. Waiter. First attack of biliary colic 1 year ago, followed by 2 others, the last being 14 days before admission. No vomiting, but retching with every attack; jaundice, but no alteration in urine or faeces. On admission slight jaundice, and some pain in the right hypochondrium on palpation; nothing abnormal felt in abdomen. Operation on 3rd day. Incision in right linea semilunaris; gall-bladder, which was slightly distended, was incised, but no stone felt in it or in the bile-duets. Gall-bladder stitched to abdominal wall, and drainage-tube inserted. On following day patient complained of great abdominal pain; abdomen became distended, rigid, and very tender; constant retching and vomiting. Temp. 101°. Pulse 110. Pain relieved by morphia, but patient died a few hours afterwards. P.M.—General

peritonitis; a small pocket of pus found near the neck of the gall-bladder. Gall-bladder firmly adherent to abdominal wall. Heart normal.

2. J. S.—, male, æt. 58. Mariner. Patient admitted to hospital in 1897 for biliary colic and jaundice. Two small cholesterine stones were passed, after which jaundice disappeared, and patient was discharged. Present attack started on the day before readmission to Medical side, with pain in right hypochondrium, accompanied by vomiting. On admission, slight jaundice, with trace of bile pigment in urine; liver much enlarged, its edge being felt 2 inches below the umbilicus. Temp. 103·6°. Pulse 96. After admission patient had several rigors, and the liver became more prominent; so he was transferred to Surgical side for operation. Incision made in right linea semilunaris. The intestines and omentum were matted together, and the gall-bladder could not be found, but behind the liver was a large abscess containing offensive pus. After packing off the abdominal cavity this was opened, and a counter-opening made in the loin, a drainage-tube being passed between the 2 openings. For next 6 weeks pus and bile discharged from both wounds, but gradually decreased in amount. On one occasion a gall-stone was passed through the wound. A perineal abscess developed, the result of stricture in bulbous portion of urethra, and was opened, sounds afterwards being passed. Two months after operation anaesthetic given and wounds explored, 3 gall-stones being found in the cystic duct. A month later, as the amount of bile remained considerable, further operation performed. An incision was made in the mid-line, and a stone was felt at the junction of the common and cystic ducts. An attempt was made to remove it, but without success, the wound in the mid-line being sutured up. Discharge of bile still profuse, and occasionally a stone passed into the dressings. Six weeks later another operation performed; a transverse incision made about 1 inch below the discharging sinus, and stones felt in common bile-duct; duct incised, and 5 stones removed. The cystic duct was then syringed through and another stone removed. In suturing the duct an artery, probably the hepatic, was wounded, and it was found impossible to ligature it; so artery forceps were left on, and the wound plugged with cyanide. Patient much collapsed after operation, but rallied somewhat; then vomiting set in; and, though stimulants were administered, he died 3 days after operation. P.M.—A considerable amount of blood found in the abdominal cavity; it was smeared over the coils of intestine, and a small amount had collected in the pelvis, but total amount was not enough to measure. Omentum much torn, and infiltrated with blood, having the appearance of haemorrhage having occurred in its substance, and so ploughed it up. All the internal organs bile-stained. Gall-bladder very small, and only found on section of the liver. It contained no gall-stone. Common and cystic ducts both dilated, but free from calculi; liver normal in appearance. Lungs emphysematous; atheroma of aorta.

GENITO-URINARY SYSTEM.

Stricture.—Males 43. C. 17, R. 18, U. 1, D. 7. History of trauma in 3.

Situation.—Penile 3; penile and bulbous 3; bulbous 24; membranous 7; not stated 6.

Complications.—Retention of urine 12; extravasation 9; fistula 3; abscess 5; enlarged prostate 2.

Treatment.—Dilatation 17; external urethrotomy 13; internal urethrotomy 3; Cock's perineal puncture 5; incision 3; supra-pubic puncture 2; supra-pubic cystotomy 2.

Fatal cases.

1. J. S.—, male, æt. 60. Engineer. Stricture of urethra. Extravasation of urine. Erysipelas. (*Vide Special Table I.*)

2. J. P.—, male, æt. 44. Horse-keeper. Patient had had a stricture of bulbous part of the urethra for 8 years. For 3 or 4 days before admission had had great difficulty in micturition, and for 24 hours had not passed water at all. On admission bladder greatly distended; a large swelling in the perinæum, with oedema of penis and scrotum. Immediate operation, incision in the perinæum extending into the urethra; a large amount of foul-smelling urine mixed with pus escaped, and on introducing a finger the tissues all round the membranous urethra were found to have been opened up. Wound syringed out, and Watson's silver tube inserted into bladder through wound. Swelling of penis and scrotum subsided somewhat, and on 4th day silver tube left out. A few days later, however, temperature began to rise, and patient gradually got weaker, temperature reaching 104·8 on 20th day, and at the same time patient had shivering fits, though no definite rigors, and complained of pain and tenderness in the loins; blood passed *per urethram*. The following day he became delirious, and died on the 24th day. P.M.—Bladder contained a large mass of soft black clot; bladder dilated and hypertrophied, surface slate-coloured, and rugæ much enlarged. At several spots there was haemorrhage into the mucosa, and in one place the open mouth of a vessel could be seen, from which, in all probability, the haemorrhage had originated. Both ureters much dilated, the lower third of the right being as large as a piece of small intestine, and the remainder not much less. Both kidneys large, and on section cortex seen to be narrow, but studded with small abscesses. Heart flabby and dilated.

3. G. N.—, male, æt. 78. History of gonorrhœa. Had had a stricture for 30 years, during which time had had instruments passed occasionally. For a week before admission had only passed urine after much straining, and then urine had dribbled away. Admitted with retention, bladder being distended up to the umbilicus. Penile stricture; catheter could not be passed, but after a hot bath patient managed to pass his water. Afterwards patient passed water naturally, but on 5th day patient had attack of syncope, and died. P.M.—Suppuration found round penile urethra, with a large abscess in the middle lobe of the prostate. Bladder much inflamed, the mucous membrane in places being gangrenous, and the urine which it contained being most offensive. Ureters normal. Contracted granular kidneys; no suppuration. Old tuberculous foci in lungs. Pericardium adherent to the heart, but the adhesions easily separated. Heart hypertrophied, muscle very friable and evidently fatty; both coronary arteries atheromatous.

4. J. G.—, male, æt. 45. Miller. Stricture for many years. Extravasation commenced 2 days before admission. On admission patient had retention; large swelling in perinæum, the penis and scrotum being red, tender, and very swollen. Patient's general condition bad. Large incision made in the perinæum, and

much foul pus evacuated; a silver catheter then passed through urethra. Patient went rapidly downhill; death on 4th day. P.M.—Bladder wall thickened, both ureters dilated to the size of a forefinger; kidneys both enlarged, with abscesses in cortex. Heart large, and left ventricle hypertrophied; valves competent.

5. R. W.—, male, æt. 66. Labourer. For 2 days before admission patient had had retention, and had been able to pass water only in very small quantities. On admission bladder extended above the umbilicus. An attempt was made to pass various forms of catheter, but without success, owing to a stricture in the bulbous portion. On examination of the rectum prostate found to be uniformly enlarged. Operation, supra-pubic cystotomy; urine very offensive, and contained much pus and about one fifth albumen. Patient gradually got weaker, and 14 days after admission became delirious, death occurring on 20th day. P.M.—Chronic interstitial nephritis; prostate enlarged; bladder hypertrophied. The upper lobes of both lungs contained a series of ragged intercommunicating cavities, which contained offensive pus, and also some caseous material, which lined the walls. Heart atrophic.

6. W. P.—, male, æt. 57. Carpenter. Stricture, following trauma, for 37 years. Admitted 2 years previously for stricture of membranous urethra, cystitis, and irreducible inguinal hernia. Cystitis relieved by bladder-washing, and stricture dilated; hernia reduced. For 7 months patient had noticed his urine becoming more and more offensive, and a week before admission patient noticed blood in it, the blood usually appearing at the beginning and end of micturition. On admission a tough fibrous stricture in membranous urethra; a No. 4 gum-elastic catheter passed with difficulty under an anaesthetic, a week later a 10-14 silver sound passed, and 4 days after a No. 7 gum-elastic catheter passed and tied in. Bladder was then washed out with weak boracic solution; this was followed by rise of temperature, so was discontinued. The following day diarrhoea commenced, and, patient rapidly getting worse, died on 27th day. P.M.—Bladder dilated; cystitis. Both kidneys were in a state of hydro-nephrosis, and ureters were much dilated. Each kidney scarred in several spots on its surface. Other viscera healthy.

7. A. L.—, male, æt. 57. Foreman. History of gonorrhœa. Five years before had had a perineal abscess, which had been treated at another hospital. A fistula had remained; and, though an operation had been performed 18 months before, it still remained on admission. For 3 weeks patient had had increased difficulty in micturition; urine blood-stained, and contained pus and albumen. Urine dribbled away through perineal sinus; stricture present in the bulbous portion of urethra. Bladder washed out daily, first with boracic lotion, and later with a solution of silver nitrate. Later patient had pain in the right loin, and was troubled with hiccup, death occurring on the 31st day. No P.M.

Enlarged prostate.—Males 24. C. 1, R. 21, D. 2.

Complications.—Retention 12; cystitis 3; hæmaturia 2; suppurating hydrocele 1.

Treatment.—Prostatectomy 3; vasectomy 3; supra-pubic 9; catheterism in remainder.

Fatal cases.

1. W. W.—, male, æt. 74. Labourer. Patient admitted with difficulty in micturition. *Per rectum*, prostate much enlarged. Catheter passed easily, but causes pain. Urine coffee-coloured; contained much pus and blood. Patient was very weak and feeble, and died on 7th day. No P.M.

2. M. F.—, male, æt. 60. Patient admitted with retention, and a history of difficulty in micturition for several years. On admission, bladder distended up to umbilicus; a catheter could not be passed owing to false passages. Cock's puncture performed, a Watson's tube inserted into bladder, and the urine drawn off. Drainage not satisfactory. Supra-pubic cystotomy on following day, and at the same time the middle and right lobes of the prostate enucleated; rubber tube into bladder through supra-pubic opening, and Watson's tube in perineal opening. 2nd day, drainage satisfactory, chiefly through supra-pubic opening; slight rise of temperature. 7th day, Watson's tube removed; boracic bath daily, as the wounds were rather sloughy. 9th day, under anaesthetic; rubber tube introduced through perineal wound and brought out through supra-pubic; bladder very septic. 11th day, temp. 103°; urine very offensive; patient much weaker; death on following day. P.M.—Mucous membrane of bladder discoloured and sloughy. Right lobe of prostate had been cleanly removed; left lobe much enlarged. Ureters thickened. Both kidneys enlarged and tough; pelvis dilated; streaks in some of the pyramids, and a few foci of suppuration in the cortex.

Tuberculous bladder.—Male 1; female 1. R. 2.

Treatment.—Irrigation, with gradual distension of bladder.

Moveable kidney.—Females 8. C. 4, R. 1, U. 3. Transferred to Medical 1. “At own request” 2. Twisted ureter with hydronephrosis 1.

Treatment.—Lumbar nephropexy 4; nephropexy with puncture of pelvis and untwisting of ureter 1.

G. C.—, female, æt. 18. For a year before admission patient had had frequent attacks of pain in left lumbar region, which ran down to the groin; attacks accompanied by nausea and vomiting, and complete prostration; attacks occurred about once a fortnight; no alteration in quantity of urine at time of attack, and urine free from blood. On admission nothing definite felt; slight tenderness in left loin; urine normal. Operation on 9th day. Lumbar incision; kidney enlarged and very moveable, the enlargement being due to slight hydronephrosis. Surface of the kidney was carefully examined, but no stone felt; ureter normal. Kidney put back in abdomen and wound stitched up, drainage-tube being left in. Tube removed 3rd day after operation. Patient progressed favourably till 10th day, when she complained of dragging pain in the left loin. This gradually increased, and 2 days later was accompanied with vomiting; wound quite healthy. Temp. 103°. Marked tenderness in left lumbar region, but nothing abnormal felt. Fourteen days after first operation the wound was opened up again; kidney found to be larger than before, and could not be brought out of old wound until it has been enlarged. Large hydronephrosis; ureter twisted, causing a kink. Cyst punctured, and 10 ounces of fluid removed; ureter un-twisted and probe passed down it, and at the same time vaginal examination

made, but nothing abnormal felt. Incision in pelvis of kidney sutured, kidney returned into abdomen and fixed, wound being sutured up with drainage-tube left in, but removed on 6th day. Urine discharged from wound for a few days, but ceased on the 9th day. Patient discharged with wound healed and feeling perfectly well on 50th day.

Renal calculus.—Males 4, females 3. C. 6, R. 1. Readmitted 1.

Hæmaturia 2; albuminuria 3; lumbar pain 5; colic 1; oxalate with phosphate and carbonate of calcium 4; uric acid and phosphates 2; hydro-nephrosis 1.

Treatment.—Lumbar nephrolithotomy 4; nephrectomy (lumbar) 2.

Renal calculus; subphrenic abscess.—F. S—, female, æt. 37. Attacks of pain in left lumbar region for 10 years, becoming more frequent for 2 months; no vomiting; urine noticed to be thick after attack. On admission left kidney easily palpable, and felt to be enlarged; urine contained albumen and slight trace of blood. Operation on 14th day. Lumbar incision; pelvis of kidney somewhat dilated; a large branching calculus felt; kidney excised; ureter not ligatured separately; small gauze drain left in. Slight amount of discharge for few days. On 24th day patient began to complain of some pain in the lower part of chest on left side. Temp. 100°. Five days later signs of fluid beneath left side of diaphragm; wound reopened on 36th day, and a quantity of old blood-clot and pus evacuated from beneath the diaphragm. Two days later severe hæmorrhage; wound cleared out, bleeding point not found; wound plugged; afterwards considerable amount of discharge, but no fresh hæmorrhage. Gradual improvement. Discharged cured on 101st day.

Hydronephrosis.—Males 2, female 1. C. 2, R. 1. Readmitted 1.

Pyonephrosis.—Males 5, females 2. C. 4, U. 2, D. 2. Sinus 3; renal calculi 2.

Treatment.—Nephrectomy 3; nephrotomy 2.

Fatal cases.

1. C. W—, male, æt. 61. Tutor. For a year patient had had frequency of micturition, and for a month urine had been thick and very foul. On examination, prostate enlarged and tender on pressure; left testicle enlarged and hard. Tenderness in both lumbar regions. Urine contained a large amount of pus. Prostate became softer, and on 5th day pus discharged *per rectum*. Bladder irrigated with boracic lotion. Septic rash on 6th day. Death on 19th day. P.M.—Pelvis and calices of both kidneys dilated and full of offensive pus; ureters dilated. Bladder wall thickened; a large abscess beneath mucosa; prostate enlarged and infiltrated with pus. Cirrhosis of liver. Heart enlarged; hypertrophy of left ventricle; valves competent.

2. H. W—, male, æt. 30. Furnaceman. In 1892 3 stones removed from left kidney. In 1895 a large branched calculus removed from right kidney at another hospital, since when he had had a discharging sinus. On admission a discharging sinus in the right loin, through which pus and urine were discharged; probe passed 1 inch. Urine acid, much albumen and pus. Great enlargement of liver and spleen; constant diarrhoea; general condition bad. Patient improved somewhat, but discharge from sinus profuse. Operation on 26th day. Kidney,

which was very adherent, removed with difficulty; ascending colon wounded and sutured; patient collapsed at end of operation. Brandy *per rectum*, and strychnine hypodermically given, and later intra-venous infusion of saline, but death occurred in a few hours. P.M.—Left kidney enlarged, calices dilated; lardaceous disease of liver, spleen, and left kidney. Running from the site of the right kidney was a perinephritic collection of pus, which reached as far as the middle of the right iliac fossa. Wound in the ascending colon securely sutured.

Vesico-vaginal fistula; cystitis; pyonephrosis.—O. V.—, female, æt. 40. Six years before hysterectomy performed in Brussels, followed by vesico-vaginal fistula; 2 years later this was operated on in London, and cured for a time. Six weeks before admission patient felt great pain in lower part of abdomen; relieved somewhat by passing water. Urine alkaline; contained a large amount of pus and albumen. Vagina found to be closed 1 inch from external orifice. *Per rectum* a large number of calculi felt either in the vagina beyond the stricture, or else in the bladder. Operation on 3rd day. Supra-pubic cystotomy; a large stone, consisting of calcium phosphate and carbonate, removed from the bladder; a fistula the size of a sixpence found to be opening into upper part of the vagina; numerous calculi felt in the vagina itself. Incision then made through old scar in the vagina, and the calculi removed; the edges of the vesico-vaginal fistula excised and the fistula closed. Bladder drained by supra-pubic wound; patient kept on her face for 2 days, and bladder then drained by means of Sprengel's pump. Patient discharged on 62nd day, with very slight discharge from vagina. Readmitted 14 days later, complaining of great leakage of urine through old fistula. Operation 5 days later. By injection of milk into bladder, a small fistula found to the right of the anterior fornix at a very high level. This was closed with great difficulty, owing to its inaccessible position. Four days after operation patient had slight rigor. Temp. 101·2°, with pain in right lumbar region; and on examination right kidney found to be enlarged. An attempt was made to catheterise the right ureter, but without success; a small stone felt in the lower end of the ureter and removed, but without altering the size of the kidney; kidney then exposed from lumbar incision, a trocar inserted, and several ounces of offensive pus evacuated; opening into kidney enlarged, and drainage-tube inserted. Same evening patient much collapsed, but rallied. Gradual exhaustion. Death on 21st day after readmission. P.M.—Left kidney atrophied, with pus in pelvis and ureter, the ureter being constricted where it passed the line where the peritoneum had been sutured after hysterectomy. Right kidney hypertrophied, its pelvis was full of pus, and contained a small friable stone. Ureter dilated, and as it passed over the pelvic brim it lay in an abscess cavity in the retro-peritoneal tissue. Uterus, ovaries, and tubes had been entirely removed. Several small stones embedded in the mucous membrane of bladder.

Chronic cystitis; pyelonephritis.—J. W.—, male, æt. 64. Chemist. Twice had retention; pain and difficulty in micturition; stream noticed to be small; micturition every 10 minutes; urine thick and offensive; blood passed only after catheter; for 3 months occasional pain in both loins. On admission No. 7

catheter passed without difficulty; stone-sound passed, and wall of bladder at base found to be hard and fasciculated. *Per rectum*, prostate enlarged and hard. Sounds passed on 2 occasions. On 15th day vomiting commenced; patient became weaker, and died on 20th day. P.M.—Chronic cystitis, with pockets of pus in the thickened mucous membrane; ureters contained pus; secondary pyelonephritis. Aortic disease and marked atheroma.

Tuberculous kidney.—Males 2, females 3. R. 3, U. 1, D. 1.

Fatal case.—L. O—, female, æt. 46. Increased frequency of micturition for 3 years, passing water every 10 minutes; pain on micturition; urine contained albumen, pus, and blood. On examination right kidney easily felt, enlarged and slightly tender. Urethra dilated. Bladder scraped, and scrapings examined for tubercle, but with negative result. Kidneys skia graphed; the right seen to be enlarged, and most of the area was occupied by a large dark shadow; a small shadow also seen in substance of left kidney. Operation on 26th day. Right kidney explored; found to be greatly enlarged, but nothing abnormal found. Two days after operation temperature rose to 102·6°; abdomen rigid and much distended; no dulness in flanks; wound healthy; constant vomiting; death on 4th day after operation. P.M.—The pelvis of right kidney dilated and inflamed; inflammation appeared to be recent. Some lymph on the mucous surface; wall of pelvis a little thickened. Left kidney normal in size, lobulated, the lobulation being due to the existence of large cavities containing inspissated pus. These cavities occupied the place of the pyramids, and the pelvis also filled with similar material. In the wall of the cavities were outlying tubercles. Mucous membrane of the bladder acutely inflamed, and its surface studded by minute translucent elevations, resembling tubercles of recent date; other abdominal viscera healthy.

Vesical calculus.—Males 12, female 1. C. 12, D. 1. Recurrent with supra-pubic lithotomy 11 months previously 1.

Treatment.—Supra-pubic lithotomy 8; perineal lithotomy 2; litholapaxy 1; extraction through urethra 1; stones multiple 1; oxalate 3; urate and oxalate 1; uric acid 1; phosphates 4; calcium carbonate 2; ammonium urate and calcium carbonate 1. Weight varied from 1·56 grammes to 110 grammes.

Fatal case.—J. W—, male, æt. 65. Porter. A small stone passed *per urethram* 10 years ago. For 6 months had had pain on micturition, most marked at the end of the act. Urine passed frequently; haematuria; pyuria. Small fragments of calculus passed while in hospital. Perineal lithotomy on 8th day; stone felt behind the prostate, but, on account of its size, very difficult to remove; eventually extracted by finger. Petticoated drainage-tube inserted. Urine not passed for 33 hours. On 15th day urine more offensive; bladder washed out. Gradual exhaustion. Death on 16th day. Stone consisted of uric acid, and weighed 110 grammes. P.M.—Bladder wall thickened. In the trigone was a circular ulcer the size of half-a-crown; this led into a cavity lined with necrotic tissue, which had almost completely replaced the prostate, and had burrowed its way between the bladder and rectum, and opened exteriorly by the operation wound. Contracted granular kidneys. Heart hypertrophied; mitral disease.

Undescended testis.—Males 17. C. 14, U. 3. Orchidopexy 7; castration 7; varicocele 1.

Tuberculous testis.—Males 8. C. 5, R. 2, U. 1. Prostate involved 1; diabetes 1; scraping of tuberculous focus 1; castration 5.

Hydrocele of tunica vaginalis.—Males 15. C. 15. Excision 13; incision and plugging with gauze 2.

Hydrocele of cord.—Males 4. C. 4. Excision 4.

Hydrocele of canal of Nuck.—Female 1. C. 1. Excision.

Spermatocele.—Male 1. C. 1. Excision.

Chronic interstitial mastitis.—Females 11. C. 9, R. 1, U. 1. Amputation of breast 9. Belladonna 1. Cysts 2.

VASCULAR SYSTEM.

Popliteal aneurysm.—H. J. C.—, male, æt. 32. Timber porter. Right inguinal hernia 6 years ago; cured by operation. Severe strain of right leg 2 years ago; swelling behind the knee noticed 6 months before admission, and had gradually been getting larger, and caused difficulty in walking. No history of syphilis. Moderate drinker. Work very heavy—carrying timber. On admission a well-marked aneurysm, 2 by 2½ inches, in popliteal space; no sign of arterial disease elsewhere. Operation on 11th day. Femoral artery ligatured in Hunter's canal about 1½ inches above the opening in the adductor magnus. Wound healed by first intention. Patient discharged on 30th day, the aneurysm being quite free from pulsation.

GANGRENE.

Senile gangrene.—E. R.—, male, æt. 72. Labourer. Three months before admission had noticed pain in right foot, and big toe had become swollen. The pain became so severe as to prevent sleep. A few days before admission the toe began to go black, and this had gradually increased. On admission there was dry gangrene of big toe, which had extended on to the dorsum of the foot. No glycosuria. Amputation through lower third of the thigh on the 3rd day by anterior and posterior flaps. Stump healed perfectly except for slight suppuration round one or two stitches. Artery examined, but nothing abnormal found. Discharged cured on 38th day.

Fatal case.

G. F.—, male, æt. 69. Pensioner. Three months ago patient had cracked heel, followed by ulceration; great pain; ulceration extended over the foot, and sloughs came away. On admission there was a sloughy patch 3 inches by 2 inches on the inner side of left foot; tendons exposed and sloughy; considerable discharge of dirty red colour. Urine: trace of albumen; no sugar. Frequent diarrhoea. Gangrene gradually extended, reaching as high as the ankle; progressive loss of strength. Death, preceded by delirium and coma, on 26th day. P.M.—Gangrene, exposing first and second metatarsal bones on the left foot. Sloughs had separated, and the wound was covered with healthy granulations, but the bone was necrosed. Heart: left ventricle hypertrophied; aortic valves thickened with vegetations along the borders of the cusps, but valve competent; mitral valve normal; slight atheroma at the base of the aorta. Lungs emphysematous; slight interstitial change in kidneys.

Gangrene of left foot; glycosuria.—B. Q—, male, wt. 62. Carpenter. Sore developed on middle toe of left foot 6 months before admission. This was treated privately by cauterising with silver nitrate and various dressings, but without healing. One week before admission treated as out-patient of hospital; a piece of bone removed from toe. Two or 3 days later gangrene set in, and patient was admitted. On admission the outer side of the left foot gangrenous, moist, and very offensive; redness extended half way up the leg. Arteries atheromatous. Urine, abundance of sugar and trace of albumen. Amputation on 2nd day through lower third of the thigh. Death 2 days later. No P.M.

Gangrene of toe; glycosuria.—C. C—, male, æt. 62. Watchman. For 1 month patient had had pain in the middle toe of left foot. This had gradually swollen, and then turned black. For a week had complained of great thirst. Appetite good; loss of weight; no history of alcohol; gets up at night to pass water. On admission middle toe black and gangrenous; cellulitis extending on to dorsum of foot; œdema up to ankle; no line of demarcation. Urine, trace of albumen, sugar. Circular amputation through lower third of the thigh on the 4th day. Death 2 days later. P.M.—Heart: endocardium deeply blood-stained; no atheroma or valvular mischief. œdema of both lungs. No naked-eye change in liver, kidneys, or pancreas. Popliteal artery of amputated leg had a calcified middle coat; small arteries normal.

Gangrene of both legs; albuminuria.—M. B—, female, æt. 43. Five years before admission patient had had right hemiplegia, from which she had never completely recovered, so that at the time of admission she had weakness of right side, and could not articulate clearly. On examination dry gangrene of both feet and legs, reaching half way up to the knees, a fair line of demarcation. Urine contained albumen but no sugar; a sloughy bedsore over the buttocks; arteries all over the body much thickened. Legs dressed with dry dressings. Morphia in large doses. Death on 10th day. P.M.—œdema of both lungs; consolidation of right lower lobe; no infarcts. Heart dilated; muscle friable and flabby; valves normal. Fatty degeneration of liver. Spleen congested; no infarcts. Several infarctions in both kidneys, some recent, others merely cicatrices, the upper third of left kidney being practically destroyed by numerous infarctions which had fused; the organ was tough, and there was probably some previous interstitial change. Pancreas small, soft, and friable.

Gangrene of foot; chronic obliterative endarteritis; glycosuria.—J. K—, female, æt. 66. Sudden attacks of pain in left leg, extending from hip to toes, for 3 years, gradually getting more severe and lasting several days. Last attack same on 5 days before admission, and prevented patient from walking. Increased frequency of micturition for 1 week. On examination left leg very tender on pressure; temperature of this leg considerably lower than that of the right; slight loss of cutaneous sensibility; no discolouration of skin; no pulse felt in popliteal artery and only a very small one in the femoral. No cardiac murmurs. Urine acid, contained sugar, albumen, and pus. On 7th day left foot began to get rather blue, and was much colder than on admission. Tenth day foot quite black; breathing becoming stertorous. Eleventh day coma. Death on following day. P.M.—Lumen of left popliteal artery much diminished by thickening of

its wall, and the artery closed by a firm clot; similar clots found in its terminal branches. The arterial disease involved the aorta in slight degree only, but at the termination of the abdominal aorta was much more marked. Heart flabby and dilated; valves competent; no endocarditis. Lungs emphysematous. Liver fatty. Pancreas pale and soft. Contracted granular kidneys.

Acute traumatic gangrene of left foot.—A. B.—, male, æt. 6½. Patient was knocked down and run over by a tramcar. He was brought up to the hospital, and found to have a laceration of the inner side of the great toe and a cut on the sole of the left foot; this was dressed and he was sent home. On the following day he was brought up to be dressed, when it was found that gangrene had extended above the ankle. Temp. 99·6°. Patient admitted and the leg amputated through the knee-joint by Stephen Smith's method, the amputation being done about 20 hours after the accident. For a week patient had irregular temperature, but wound healed without recurrence of gangrene, and patient was discharged cured on 27th day.

Embolic gangrene of left hand.—S. J.—, female, æt. 48, married. For years patient had had mitral incompetence, and 7 years before had been in hospital for this disease. Three weeks before admission patient attacked with bronchitis, and was in bed until 3 days before admission, when she got up. While getting back to bed she was seized with sudden pain in her left hand, quickly followed by complete loss of power in hand and wrist; the hand became bluish black in colour and very cold, and later became swollen. On admission the left hand and wrist were discoloured, being earthy in parts and bluish black in others, the discoloration being most marked on palmar aspect of thumb, which was almost black; the forearm somewhat swollen, with redness of anterior surface, but cold to the touch; absence of tactile sensation in wrist and hand; no pulse felt in brachial artery. Arm dressed with dry cyanide and cotton wool; pain treated with morphia. Urine contained much albumen, but no sugar. Eight days after admission the discoloration had cleared up, except in the thumb; sensation somewhat returned; pulse in brachial artery just felt. Fifteenth day, gangrene limited to distal phalanx of thumb, a line of demarcation just beginning to form; pain much less. Patient discharged on 36th day. At that time entire hand and wrist had regained their normal appearance, except the distal phalanx of the thumb, which was gangrenous; movements possible in wrist-joint, but fingers still powerless; tactile sensation much more acute, especially in the little and ring fingers; pulse plainly felt in the brachial, but not in the radial or ulnar. Urine free from albumen.

THYROID.

Parenchymatous goitre.—Males 2, females 2. C. 2, R. 1, U. 1. Dyspnœa 1.

Treatment.—Thyroid extract 1; excision of isthmus 2; “at own request” 1.

Adenoma.—Males 2, females 3. C. 5. Excision in all.

Cysts.—Male 1, females 4. C. 4, R. 1. Previous removal followed by myœdema 1.

Treatment.—Tapping and thyroid extract 1; excision 4.

ARTICULAR SYSTEM.

Shoulder—Tuberculous arthritis.—Male 1. Previous admission 2 years before.
Treatment.—Excision by anterior incision.

Osteo-arthritis.—Male 1. Marked wasting in parts supplied by ulnar nerve.
Treatment.—Massage and tonics.

Elbow—Tuberculous arthritis.—Males 10, females 7. C. 3, R. 14. Readmission 2. Sinus 4; tuberculous shoulder 4; phthisis 1.

Treatment.—Excision 4; arthrectomy 6; scraping 3; plaster-of-Paris splints 4.

Septic arthritis.—Male 1. R. 1. Incision had been made into joint before admission. Antiseptics.

Ankylosis.—Female 1. R. 1. Osteotomy and massage.

Wrist—Tuberculous arthritis.—Males 2, females 2. C. 1, R. 3. Abscess 1; sinus 1.

Treatment.—Amputation of forearm 1; incisions and scraping 2; splints 1.

Septic arthritis.—Female 1. R. 1. Splints.

Hip—Tuberculous arthritis.—Males 30, females 29. C. 4, R. 52, U. 1, D. 2. Family history of tubercle 11; extra-peritoneal abscess 1; caries of ilium 1; sacrum 2; diphtheria 1.

Treatment.—Anterior arthrectomy 2; anterior excision 8; external excision 1; arthrotomy 6; exploration of trochanter 1; scraping of sinus 9; amputation of hip-joint 1; Furneaux Jordan's amputation 2; amputation of lower third of thigh 1; remainder by rest, extension, and Thomas's splint or plaster of Paris.

Fatal cases.

1. A. P—, male, æt. 18. No history of tubercle. Hip trouble started at age of 7 years. Abscesses had developed in connection with the hip and had been opened, and for years patient had had sinuses in front and behind the joint. On admission left thigh much wasted, adducted, and inverted; marked lordosis; multiple sinuses; hip ankylosed. Tuberculous testis with sinus communicating. Liver and spleen much enlarged. Albuminuria. Treated with antiseptic dressings for 6 weeks without improvement. Operation on 43rd day; amputation by anterior and posterior flaps through lower third of thigh. Broncho-pneumonia. Death 8 days after operation. P.M.—Lungs showed wedge-shaped patches of broncho-pneumonia, and in these were numerous small abscesses, pyæmic in character. Liver much enlarged, and characteristic appearances of lardaceous disease. Spleen and kidneys affected with lardaceous disease. Intestines not affected. Stump healthy.

2. J. P—, male, æt. 50, mason. Pain in left thigh for 12 months; much worse for a fortnight before admission; pain almost entirely confined to the back of the thigh, and usually worse after exertion; movement of hip-joint not affected; muscles of thigh and leg somewhat wasted. Anæsthetic given on 6th day. Some thickening around the joint, but movements quite free; shortening 1½ inches. For next month patient steadily improved under massage, but still had slight pain on abduction and adduction. Anæsthetic again given, and the thickening thought to be less than before; movement good. At the end of 2 months extension applied, and a little later joint began to swell. On the 67th

day hip-joint explored by means of anterior and exterior incisions; a quantity of tuberculous pus evacuated. Head of femur and acetabulum both found to be carious; head of femur excised and acetabulum scraped; joint washed out and again closed, limb being put in plaster-of-Paris splint. Wound healed, but a fortnight later broke down again, discharging much pus. Pus continued to discharge without diminution. On 163rd day left leg became very œdematosus. On 177th day wound opened up afresh and a quantity of dead bone removed; drainage-tube inserted. Afterwards pain much worse and discharge very profuse. Boracic baths tried, but caused patient so much pain that they had to be discontinued. On 192nd day hemorrhage from wound, stopped by plugging. On following day amputation at hip-joint with anterior and posterior flaps, the artery being secured at the beginning of the operation. Saline infusion, 2 pints, during operation. Arteries gritty with calcareous degeneration. Patient much collapsed. Death 3 hours later. P.M.—Both lungs œdematosus and covered with fibrous nodules in the subpleural lymphatics, which contained gritty particles and much carbon; similar nodules in the fibrous septa of the lungs; no consolidation; definite cavity at the right apex. Heart small; atheroma of the aorta; calcareous plates in the hollow of the aortic valve, though not on the cusps. No lardaceous disease.

Osteo-arthritis.—Male 1, female 1. R. 2. Hot air baths.

Puerperal arthritis.—Female 1. R. 1. Dislocation of hip. Reduction and extension.

Hysterical arthritis.—Female 1. C. 1. Electricity and massage.

Arthritis, ? syphilitic.—Male 1. C. 1. Dorsal dislocation of hip. Excision of head of femur.

Knee—Tuberculous arthritis.—Males 27, females 12. C. 17, R. 22. Readmitted 2. Family history of tubercle 7; caries sicca of humerus 1; glands of neck 1; lateral curvature 1.

Treatment.—Excision 14; arthrectomy 2; arthrotomy 4; amputation of thigh 2; remainder by plaster of Paris, leather, or Thomas's splint.

Ankylosis.—Males 2, females 3. C. 2, R. 3. Osseous 3; fibrous 2. Previous excision for tubercle 3. Cuneiform osteotomy 3; passive movement 2.

Osteo-arthritis.—Males 5, female 1. C. 2, R. 3, D. 1. Empyema 1; ischio-rectal abscess 1. Excision 2; massage and hot air baths 1; massage 3.

Fatal case.—T. L., male, æt. 57, labourer. Left knee affected for 8 months, and now gives way under him, so that he is unable to continue his work. On admission marked osteo-arthritis of left knee; other joints not so much affected. Excision of knee on 7th day. Synovial membrane thickened; cartilage worn off the internal malleolus of femur over a large area, the bone being smooth, hard, and striated antero-posteriorly; slight lipping of femur. Wound suppurated; much discharge; some cellulitis. Counter incisions. Death on 57th day. P.M.—Acute pleurisy of the right lower lobe, with about a pint and a half of dirty pus in the pleura. No consolidation or infarction. Heart and pericardium healthy. Other viscera normal.

Septic arthritis.—A. O.—, female, æt. 35, married. Patient admitted to the Home, 2 months after birth of her child, with septic arthritis of left knee following puerperal fever. Knee-joint opened, much pus evacuated; irrigation; drainage-tubes inserted. Temperature ranged from 99° to 104°. Rigors 2 days after operation. Injections of antistreptococcus serum, but without benefit. Patient in the Home 2 months and then transferred to the hospital, temperature being 101° to 102°. Amputation advised, but refused. Patient steadily got weaker. Fresh incisions made from time to time. Twelve days after admission consented to amputation, which was performed through the middle of the thigh. After operation condition much improved, and temperature came down to normal; but 3 weeks later consolidation of base of right lung appeared, patient's condition became much worse, and she died on 48th day. No P.M.

Dislocation of semilunar cartilage.—Males 3, females 2. C. 4, R. 1. Internal in all. Excision of portion 3; reduction 2.

Loose body.—Male 1. Arthrotomy and extraction.

Ankle—Tuberculous arthritis.—Males 6, females 2. C. 2, R. 5, U. 1. Readmission 1. Phthisis 1; sinus 1.

Treatment.—Arthrectomy 5; scraping of sinus 1; plaster-of-Paris splints and peg leg 1.

Sacro-iliac disease.—Males 4, females 2. R. 6. Readmission 1. Arthrotomy of joint through ilium 2; scraping of sinuses 3.

Spondylitis deformans.—Male 1, female 1. R. 2. Massage and hot air baths in both cases.

AUDITORY SYSTEM.

Aural polyp.—Male 1. C. 1. Removed.

Otitis media suppurativa.—Males 3, females 8. C. 10, R. 1. Readmission 1.

Otitis media suppurativa; mastoid abscess.—Males 25, females 19. C. 23, R. 21. Readmission 5. Erysipelas 2, *vide* Special Table II.

Treatment.—Complete mastoid operation followed by grafting of bony cavity with Thiersch grafts 7 (for description of operation *vide* ‘Medico-Chirurgical Transactions,’ Vol. 83). Remaining cases treated by opening up of antrum and drainage.

Otitis media suppurativa; mastoid abscess; thrombosis of lateral sinus.—Males 5, female 1. C. 3, D. 3.

S. B.—, male, æt. 6. Discharge from right ear for 1 year. For 3 weeks severe pain in right ear; headache; fomentations applied; discharge profuse. For a week frequent shivering fits, with delirium at times. On admission no tenderness over mastoid, but tenderness over the course of the right internal jugular; child flushed and ill; eyes normal; no optic neuritis; no paralysis; temp. 101·2°. Operation: right jugular vein found to be thrombosed; thrombosis extended into the thorax; vein ligatured as low as possible, but not below the thrombosed part; pus in upper part of vein, the lower end of which was stitched to skin for drainage. Mastoid antrum opened and found to contain pus; lateral sinus exposed and

found full of offensive pus, the wall of the sinus having sloughed away; sinus syringed out through the jugular vein and gauze drains left in both wounds. Second day temp. 103°8, pulse 150; child fretful and at times rather drowsy; wound dressed; vein syringed out. For 10 days the temperature remained high at night, reaching usually 103°, and pulse averaged about 120. No signs in chest. Wounds gradually became cleaner, and patient's general condition improved. Temperature normal on 12th day. Discharged with wounds perfectly healed on 25th day.

Otitis media suppurativa; mastoid abscess; thrombosis of lateral sinus.—J. L.—, male, æt. 16, shopman. Discharge from right ear for 3 months. Three weeks before admission was taken ill, with pains all over him, and was told he had rheumatic fever. Severe headache developed, most marked in the frontal region, and running down the right side of the neck. Rigor just before admission. On admission, a thick offensive discharge from the right ear; slight tenderness over the right mastoid, but no swelling or redness. Pupils equal and reacted to light and accommodation. Knee-jerks normal; other reflexes normal; no ankle-clonus; no facial paralysis; tongue foul. Nothing abnormal in chest or abdomen. Slight tenderness over right shoulder, but none over neck. No optic neuritis. Temp. 97°. On following day rigor; temperature rose to 104°6'; vomiting; tenderness over right side of neck. Operation: ligature of right jugular vein, which was completely thrombosed, the upper part containing breaking-down clot; lower part of the vein excised, but impossible to get beyond the clot, which was scraped out as much as possible; upper end of vein sutured to skin. Mastoid opened and found to contain pus and septic granulations; sinus exposed and found to be surrounded with pus; on opening the sinus clot found in it, but some bleeding occurred; plug inserted. Second day, complained of great pain; temperature subnormal, pulse 84, respiration 16. Third day, less pain; temp. 99°, pulse 68, respiration 20. Fourth day, wound dressed; very offensive; plug in lateral sinus not removed. Sixth day, much offensive discharge, especially from the wound in the neck; temp. 100°, pulse 68, respiration 24; optic neuritis in both discs. Ninth day, plug removed from lateral sinus; much less discharge; general condition much improved. Uninterrupted recovery. Discharged on 38th day with small sinus over the mastoid.

Otitis media suppurativa; mastoid abscess; pus round the lateral sinus.—E. H.—, male, æt. 15. Admitted complaining of pain in the right ear and on right side of head for 14 days. No history of discharge from ear. Rigors and sickness on the day before admission. On examination tenderness over the right mastoid; no tenderness in the neck; temp. 103°, pulse 124, respiration 40. Operation: mastoid antrum opened, contained much pus, which was very offensive; gauze plug left in. Slight improvement on the following day, but during night rigors, temperature rising to 103°6', pulse 70. Second day, internal jugular vein ligatured; vein found to be healthy. On 3rd day temperature rose to 104° with rigors; optic neuritis. Skull trephined over the lateral sinus; foul pus was found round the sinus, but the sinus was not entirely thrombosed; plug inserted. Fourth day, slight rise of temperature, but no rigors; sickness stopped. Gradual improvement until the time of discharge on 36th day.

Fatal cases.

1. *Otitis media suppurativa; mastoid abscess; temporo-sphenoidal and cerebellar abscesses.*—J. J.—, male, *æt.* 6. Discharge from left ear since he was a baby. For a fortnight he had had headache and been rather drowsy. Sickness on the morning of admission. On examination tenderness over left mastoid; temp. 98°, rising on 3rd day to 102·6°. Operation on 4th day. Antrum opened up by trephine and found to contain much pus; free communication with tympanum; drainage-tube inserted. Following day temperature normal, but on 6th day patient became comatose; pupils dilated, reacting slightly to light. Skull trephined over the temporo-sphenoidal lobe and a trocar and cannula inserted, and a large abscess found in the posterior part of the temporo-sphenoidal lobe; opening enlarged and drainage-tube put in. Patient's condition only slightly improved; brain bulged through trephine hole. On 8th day wound reopened and more bone removed, but no collection of pus found. Death on 9th day. P.M.—An abscess cavity found in posterior part of temporo-sphenoidal lobe, which had been drained. The whole of the left lobe of the cerebellum was converted into an abscess cavity, with a very thin shell of brain tissue, and filled with dirty brownish pus. Beneath the dura mater, on the posterior aspect of the petrous bone, was a small abscess, the bone being carious at that spot. Sinuses not affected. Slight œdema of lungs. Subacute nephritis.

2. *Otitis media suppurativa; mastoid abscess; cerebellar abscess; meningitis.*—A. C.—, male, *æt.* 57, gardener. Discharge from right ear for 30 years, following a blow from a cricket ball. Six months before had had severe pain followed by profuse discharge. One month before he had felt ill, with headache and giddiness, rise of temperature, and had been treated at the Harrow Hospital. Fourteen days before says he saw double. On examination, discharge from the right ear; complete paralysis of right side of the face; right pupil larger than the left, but not stable; nystagmus. No other paralysis. Knee-jerks exaggerated. No optic neuritis. Urine contained trace of albumen. Temp. 100°, pulse 96. While in hospital patient complained of severe frontal headache, of giddiness, and vomited on several occasions. Operation on 4th day. Complete mastoid operation, the antrum, attic, and tympanum being thrown into one, and then free communication made with the external auditory meatus by removal of the posterior wall of the bony meatus. Aqueductus Fallopii found to be opened and the roof of the antrum found to be destroyed, so that the meninges were exposed; lateral sinus healthy; concho-meatal flap; drainage through external auditory meatus. Fifth day, pain relieved; temp. 101·4°. Sixth day, shivering, but no definite rigor; no paresis; discharge from ear offensive; temp. 100·4°, pulse 108. Eighth day, comatose; doubtful weakness of left arm; divergent strabismus; knee-jerk on left side slightly exaggerated; temp. 103°, pulse 140. Death on following day. P.M.—Marked basal meningitis; 7th and 8th nerves on right side surrounded by a sheath of inflammatory products; pus in right semicircular canals. The right flocculus of the cerebellum was converted into an abscess cavity, which was as large as a Spanish nut, appearing to be of old standing. A second recent abscess lay between the membranes and the under surface of the right side of the pons. No abscess in the cerebrum or lateral lobes of the cerebellum. Sinuses healthy. Confluent broncho-pneumonia in the lower lobe of each lung.

3. *Otitis media suppurativa; mastoid abscess; temporo-sphenoidal abscess.*—C. H.—, male, æt. 8. Discharge from right ear ever since he was 6 months old; much worse for 1 month, during which time he had also had frontal headache, and had been dull and heavy. On admission much purulent discharge from right ear and a small amount from left. Pupils equal; lateral nystagmus. Knee-jerks present and not exaggerated. No optic neuritis. Temp. 99°. No tenderness over mastoid. On 4th day temperature rose to 103°, with slight retraction of the head; very restless; reflexes brisk. Operation on 5th day. Complete mastoid operation; pus and granulation tissue in antrum; 7th nerve found to be exposed; concho-meatal flap; wound syringed out with 1 in 20 carbolic; drainage through external auditory meatus. 6th day temp. 98·6°, pulse 96. Pain much easier and boy brighter. Temperature, with one exception, remained about normal until the time of discharge on 22nd day, when the otorrhœa was very slight. Readmitted 12 days later, being drowsy and stupid, and complaining of much frontal headache. Pupils were equal and reacted to light; double optic neuritis, more marked on the right side. Knee-jerks brisk. No paralysis. On 2nd day appeared better, but during the night became very restless, screaming at intervals; and on 3rd day, at 8 30 a.m., patient had a fit; body and extremities became rigid; arms brought across the chest with the back of the hands in contact; fingers flexed; pupils not affected. At 12 o'clock marked paresis of left arm; no facial paralysis. Death a few hours later, preceded by temperature of 105·2°. P.M.—Right temporo-sphenoidal lobe adherent to the upper surface of petrous bone, and in this lobe was an abscess as large as a big walnut. A perforation present in the tegmen tympani about the size of a threepenny bit. No meningitis. Sinuses healthy.

4. *Otitis media suppurativa; mastoiditis; tuberculous meningitis.*—J. F.—, male, æt. 7. Purulent discharge from left ear for 9 months. Seven days ago became drowsy, with occasional attacks of sickness. On examination patient somewhat drowsy, but understood when spoken to. Tenderness and œdema over the left mastoid process; foul discharge from the left auditory meatus; glands of neck enlarged. Temp. 101·8°, pulse 104. Ear syringed out. Next day patient more drowsy; double optic neuritis. Operation: antrum opened up, and found to contain pus; lateral sinus explored, but found to be healthy; skull trephined and temporo-sphenoidal lobe and cerebellum explored, but without finding pus; plug inserted behind the ear. Following day temperature fell to 99·8°, pulse 124. Boy still remained drowsy. Sixth day, Cheyne-Stokes respiration; temp. 101·2°, pulse 140. Death on 7th day. P.M.—Extensive tuberculous meningitis over the base of the brain; ventricles distended with turbid fluid, and surrounding brain substance softened. No abscesses. Left middle ear almost completely destroyed by old-standing suppuration and bone much discoloured. Miliary tubercles of both lungs. A few tubercles on abdominal viscera.

5. M. T.—, male, æt. 32, tailor. Had undergone operation for cerebral abscess at St. Bartholomew's Hospital 8 years previously. For a fortnight had complained of severe headache, with pain in the ear. Pain in the head had gradually been getting worse, but earache had disappeared. Had been treating himself with poultices. Seven days before admission he began to vomit, and had con-

tinued to do so at intervals up till the time of admission. Patient became unconscious and was brought to the hospital. On admission much collapsed; quite comatose, but roused himself when touched, trying to push away the object touching him, and at the same time muttering incoherently. Pulse 48, full; respiration slow and deep; temp. 98·2°. A small puncture behind the ear, which discharged pus, and which wife said had appeared spontaneously. Death in 2 hours. No P.M. report.

6. *Otitis media suppurativa; basal meningitis; glycosuria.*—W. S—, male, æt. 35. Tailor. For a year patient had had purulent discharge from left ear, and for 14 days had been acutely ill with pain behind the left ear, and in the left side of the neck; for 9 days patient had been vomiting constantly, and on the day of admission had become unconscious. On examination patient quite unconscious, and could not be roused to answer questions. No apparent tenderness over the left mastoid; no redness or œdema. No paresis. Pupils equal. No optic neuritis. Knee-jerks normal. Nothing abnormal in chest or abdomen. Urine acid, sp. gr. 1032, trace of albumen, sugar; no history of diabetes obtained from friends. Temp. 99·6°, pulse 96, respiration 60. Death a few hours later. P.M.—Purulent meningitis limited to the base of the brain, which had apparently arisen by direct infection through a foramen on the posterior surface of the left petrous bone; the purulent infection extended down the spinal canal. Left middle ear was full of inspissated pus, and the membrane tympani destroyed. Heart and lungs healthy. Pancreas and other abdominal viscera normal.

7. *Otitis media suppurativa; meningitis.*—J. P—, male, æt. 29. Labourer. Enlarged glands removed from right side of neck 6 months previously. Discharge from right ear for 5 weeks following sore throat, accompanied by pain in the head; vomiting, especially in the early morning. On admission no discharge from ear; perforation in tympanic membrane. Knee-jerks present, and equal on both sides. No ankle-clonus. Babinski's sign absent. Double optic neuritis; no paralysis. Temp. 98°; pulse 60. Fourth day, pain in head, and tenderness over occipital region. Temp. 98°, but had been 101·6° on preceding day. Sixth day, rigor, temperature reaching 102·8°; pains in the head increased; vomiting for first time since admission: Operation, right antrum opened, but found to be healthy. Skull trephined, and temporo-sphenoid lobe and cerebellum on right side explored, but nothing abnormal found; gauze drain left in. Seventh day, considerable discharge of blood and cerebro-spinal fluid into dressings. Headache much diminished. Temp. 100°, pulse 60. Fifteenth day, some bulging of brain through trephine hole. Slight nightly rise of temperature, reaching about 100°. Optic discs still swollen. 18th day, stitches removed; wound quite healed, but from wound over antrum cerebro-spinal fluid still escaped. Twenty-first day, temperature very irregular, reaching 103·4°. Pain in right shoulder. Twenty-third day, pus came from wound. Shoulder-joint swollen. Death on 24th day. P.M.—Large hernia cerebri, much meningitis, both about the base and about the right half of the brain; no evidence of tubercle. Petrous bone healthy, except for bead of pus at outer margin. Right shoulder-joint contained pus. Thoracic and abdominal viscera normal.

8. *Otitis media suppurativa; septic meningitis; thrombosis of cavernous sinuses.*—E. B.—, female, æt. 17. Tailoress. Ten days before admission adenoids had been removed in private. For months had had offensive discharge from the left ear. Had complained of headache the day before, and became unconscious on day of admission. On examination completely unconscious; no discharge from ear. Paralysis of left side of face; no paralysis of limbs. Left divergent strabismus; no control of sphincters. Temp. 100°. Death on following day. P.M.—General suppurative basal meningitis, which involved all the structures at the base of the brain. Immediately over the aqueduct of the vestibule, on the left side, was a small subdural abscess. Left cavernous sinus was blocked by old and firm blood-clot; a similar but smaller clot present in the cavernous sinus of the right side; other sinuses healthy. Left middle ear and antrum full of fœtid pus. No evidence that infection had come by nose as the result of adenoid operation. Thoracic and abdominal viscera healthy.

9. *Otitis media suppurativa; temporo-sphenoidal abscess; purulent meningitis.*—A. S.—, female, æt. 7. For 6 months had had a fœtid discharge from right ear, which had been syringed out by mother. Four days before admission complained of headache and vomited; a boiled onion applied to the ear, and this brought away much discharge, after which for next three days child felt better, but very languid. On morning of admission the mother found the child in a fit, patient throwing her head in various directions, and making strange noises; twitching of face and arms most marked on right side. On admission at 6.30 a.m. child unconscious, with the head inclined towards the left, and conjugate deviation of the eyes to the same side. Lateral nystagmus; right arm and leg limp and powerless; right knee-jerk absent, left present. At 10 a.m. child had convulsion, which was accompanied by twitching of the right arm and leg, and deviation of the head and eyes to the left; loss of power on right side as before, but both knee-jerks absent; analgesia of right side of face, right arm and right leg, but not of right side of trunk. Pupils dilated, left more than the right, but both reacted to light although sluggishly. Nystagmus not so marked as earlier in the morning. No optic neuritis. Discharge from left ear. Chest normal. Operation in the afternoon. Skull trephined over the temporo-sphenoidal lobe; brain did not bulge; trocar inserted in several directions without result; small plug left in. Second day, power and sensation in right arm and leg regained; sensation of right side of face still absent. Knee-jerks present on both sides. Patient more rational. Pupils equal and reacted to light; deviation to the left no longer present. Temp. 98·6°, pulse 120, respiration 18. No convulsions since operation. Third day, pupils again dilated, left more than right; right reacted sluggishly to light, left not at all. Pulse 140, temp. 99°, respiration 22. Patient more lethargic. Vomited three times in 24 hours. Fifth day, pupils as before. Right leg shows transient rigidity when handled. Left knee-jerk brisk; right only slight and occasional. No further vomiting. Temp. 99·2°, pulse 116. Discharge from ear very offensive. Sensation on both sides of face impaired, and completely absent from tongue. Eighth day, copious discharge of thick, yellow, evil-smelling pus from wound. Left pupil larger than right, but both reacted to light. Twelfth day, sensation regained in face, but still absent in tongue. Eyes normal. Slight discharge

from wound. Patient much brighter. Sixteenth day, no anaesthesia or loss of power in any part of body. Knee-jerks present. Twenty-eighth day, patient steadily improving. Very little discharge from wound. Temperature normal. Mental condition good. Forty-second day, for a week patient had been more dull and listless, took her food badly, and complained of constant headache and of feeling sick. Pulse 60, regular; respiration 22. Pupils equal. Slight discharge from wound. Forty-fourth day, old wound reopened; dura seen to bulge through old trephine hole; skull trephined just above it, trocar and cannula inserted and pus found; dura over old trephine hole opened up, and the abscess found to be running backwards just beneath the cortex; trephine hole enlarged and abscess cavity drained. Forty-fifth day, hernia cerebri; very restless and used bad language. Fiftieth day, hernia cerebri increased in size; still slight headache; pulse 112, temperature normal. Fifty-fourth day, hernia twice the size of a Tangerine orange; discharge still offensive. Child quite bright and lively. Sixty-eighth day, hernia much smaller, and covered with healthy granulations; very little discharge; no symptoms. Seventy-fifth day, hernia cerebri removed. Eightieth day, sent to convalescent home. Still slight discharge, but otherwise well. Patient was at a convalescent home for 2 months, and while there remained quite well, except for some twitchings on one occasion. She was then at home for a fortnight, but 2 days before readmission she began to get drowsy. On readmission a large fluctuating swelling present behind left ear; not tender to touch; pulsating. No paralysis. Child drowsy. Immediate operation. Semilunar flap dissected up, dura mater incised, and temporo-sphenoidal lobe explored; two abscesses found, one in the anterior and the other in the posterior portion of the lobe. Cavities washed out with weak carbolic and drainage-tubes inserted. Following day still unconscious; much discharge. Death on 2nd day. P.M.—On raising the brain the interpeduncular space was filled with purulent lymph; no meningitis of vertex. In the posterior part of the temporo-sphenoidal lobe was an abscess containing about 2 drachms of fœtid pus: the abscess had burst into the descending horn of the lateral ventricle, and all the ventricles were distended with purulent fluid. Petrous bone on the left side extremely carious. Thoracic and abdominal organs healthy.

See Special Table III for three cases of lateral sinus pyæmia.

SUMMARY OF INJURIES.

GENERAL INJURIES.

Burns.—Males 20, females 25. C. 30, D. 15. Radical cure for inguinal hernia 1.

Causation.—Clothes ignited 25; lamp upset 7; fall into fire 3; gas explosion 1; smoking near bottle of benzene which caught fire 1.

Treatment.—Cleaned up under anaesthetic 5; picric acid 26; boracic baths 7; Thiersch grafts 13; others by hot lotions, strychnine, and morphia.

Fatal cases.

Under 24 hours.—Male : 24 years 1. Females : 4 years 2, 5 years 1.

Over 24 hours.—Males : 2 years 1, 11 years 1, 21 years 1, 41 years 1. Females : 2 years 1, 3 years 2, 5 years 1, 10 years 1, 44 years 1, 46 years 1.

J. M.—, male, æt. 21. Packing-case maker. Lamp upset and patient's clothes caught fire; burns of trunk, arms, legs, face, and back of neck (deep). Collapse; death in a few hours. P.M.—A superficial interarytaenoid ulcer on larynx, covered with adherent secretion; trachea healthy. Lungs deeply blood-stained, and containing much dark blood; crepitant. Liver healthy, but united to the parietes by firm adhesions on its anterior aspect. No ulceration of duodenum.

Scalds.—Males 21, females 9. C. 18, D. 12.

Causation.—Hot watery fluids 28; hot soup 1; boiling fat 1.

Treatment.—Cleaned under anaesthetic 11; picric acid 14; boracic bath 2; Thiersch grafts 3; tracheotomy 1.

Fatal cases.

Under 24 hours.—Female : 1½ years 1.

Over 24 hours.—Males : 6 months 1, 1 year 2, 1½ years 1, 2½ years 3, 3 years 1, 5½ years 1. Female : 3 years 1.

Concussion.—Males 57, females 14. C. 69, R. 2.

Complications.—Cerebral haemorrhage 1; laceration of brain 1; Colles' fracture 1; fractured humerus 1; clavicle 1; scalp wounds 14.

Fractures of vault of skull, simple.—Male 1. D. 1.

Fracture of frontal and parietal bones; ruptured middle meningeal artery.—H. P.—, male, æt. 50. Labourer. Patient was turning a winch.

but the weight attached being too heavy for him, he let go, and the handle flew back and struck him on the right side of the head. Unconscious immediately after the accident, but regained consciousness five minutes later, and was able to walk and talk ; on his way to the hospital he became unconscious again. On admission comatose. Breathing laboured and stertorous. Pulse 48, temp. 97°. Pupils unequal, right being the larger. Muscles on both sides flaccid. Two hours later breathing more stertorous ; pupils equal, dilated, and did not react to light. Increasing coma. Death in four hours. P.M.—Fracture of right parietal and frontal bones, crossing the meningeal groove, and extending along the outer side of the roof of the orbit. Effusion of blood within the orbit, outside Tenon's capsule. A large extra-dural haemorrhage on the right side compressed the brain considerably ; the middle meningeal artery torn through. No haemorrhage beneath the dura. Small haemorrhagic infiltration on the upper part of the pons. Lungs congested and oedematous. Heart hypertrophied ; arteries atheromatous.

Fractures of vault of skull, compound. Female 1. C. 1. Treated by antiseptics and suture of wound.

Compound depressed fractures of vault.—Males 9. C. 7, D. 2. Trephining 7 ; elevation and removal of fragments 1.

J. W—, male, æt. 19. Labourer. Patient received a blow on the left side of the head from a poker. Admitted with complete paralysis of right arm, but quite conscious, and other limbs not affected. On examination a compound depressed fracture of left parietal bone found ; skull trephined and depressed fragments removed, some of them being embedded in the substance of the brain. Wound washed with 1 in 2000 perchloride and gauze drain inserted. Slight movements of flexion and extension of elbow, wrist, and fingers on 4th day. All movements obtained on 13th day, but grasp still weak. Discharged on 24th day with complete recovery of arm.

Fatal cases.

1. N. J—, male, æt. 8. Knocked down by a cab, the wheel of which passed over his head ; patient had been sick and drowsy, with occasional fits of screaming. On admission two large scalp wounds, one 2 to 3 inches long, in the occipital region ; the other, over the left parietal, and beneath this was a depressed fracture, running parallel to the sagittal suture. Patient unconscious, but cried out if moved. No paralysis. Pulse 56, temp. 97°. Skull trephined, extensive fractures found, depressed portions of bone raised ; brain lacerated ; wound flushed with sterilised water. Patient did not recover consciousness ; temperature rose to 104°, pulse 140 ; breathing became stertorous, and patient died on the following day. P.M.—A curved line of fracture, with a chord of 5½ inches, ran across the left frontal, parietal, and occipital bones ; separation also of suture between parietal and squamous portion of temporal ; other fractures also of squamous bone, and of middle fossa of skull. Left temporo-sphenoidal lobe of brain deeply excavated and torn at a spot corresponding to external fractures, and lateral lobes of cerebellum also lacerated. Other organs healthy.

2. J. F—, male, æt. 70. Labourer. Two bricks fell from scaffold about

0 feet high on to patient's head. Admitted with compound depressed fracture of left parietal bone; conscious; no paralysis of face or limbs; pupils equal. Skull trephined, and depressed fragments removed; inner table much comminuted; dura mater punctured in two or three places, and superior longitudinal sinus wounded; sinus plugged with gauze, and wound stitched up. Next day temp. 101°, patient restless. Second day catheter had to be passed, followed by rigor, temperature reaching 105·8°. Plug removed; right hemiplegia later in the day; coma and death on 3rd day. P.M.—Linear fissure from the middle of the occiput extending along the left side for 3 inches; slight bruising of brain in this region. Old tubercle in right upper lobe. Atheroma; contracted granular kidneys.

Fractured base.—Males 16, females 4. C. 13, D. 7. Anterior fossa 3; middle fossa 10; posterior 2; anterior and middle 2; middle and posterior 3. Laceration of brain 1; fractured ribs and laceration of kidney 1; subcranial haemorrhage 2; wound of chin 1; of forehead 1. Haemorrhage from ear 6; nose 3; mouth 1; nose and ear 2.

Fatal cases.

1. W. H.—, male, æt. 33. Canvasser. Patient fell from the top of an omnibus, and was picked up unconscious. On admission he was dazed and irritable; haemorrhage from nose; scalp wound not reaching to bone in the right occipito-parietal region; no paralysis; patient on following day became semi-unconscious, breathing stertorous, followed by coma and death on 3rd day. P.M.—Fracture of anterior fossa, laceration of brain.

2. J. W.—, male, æt. 48. Traveller. Fall from omnibus on to head. Unconscious on admission, but regained consciousness a few hours later; haematoma of both eyelids, bleeding from nose; lower jaw fractured, slight scalp wound; pulse 72; pupils equal. On 2nd day became very irritable and noisy; attempted to get out of bed; temperature rose to 103°. Death on 3rd day. P.M.—Fracture commenced in left frontal bone just above the orbital ridge, ran obliquely backwards towards the sphenoid, then across the right part of the sella turcica, turned inwards at the apex of the petrous bone, and ended in the foramen magnum; slight ecchymosis of left frontal lobe. Heart hypertrophied; kidneys congested.

3. C. G.—, male, æt. 38. Plumber. Patient found unconscious in a yard, no history of accident obtainable; on the way to the hospital patient had a fit, apparently epileptiform in character; no history of epilepsy. On admission wound over right eye; bleeding from mouth; unconscious. In Casualty patient had several fits in rapid succession, which commenced with tremors of the right hand running up the arm; following day still unconscious; very restless; occasional fits; 2nd day conscious, could answer questions when roused, but became comatose and died same evening. P.M.—A large subcranial haemorrhage in middle fossa, probably arising from middle meningeal; no fracture of middle fossa, but there was a transverse fracture along the right orbit about $\frac{1}{2}$ inch anterior to the free margin. There was a little intra-dural haemorrhage spread over the Rolandic area of right side, but brain itself appeared quite normal. Lungs oedematous, right

ower lobe almost solid from congestion. Ascending colon had a distinct mesocolon, so as to form a sigmoid bend.

4. W. G—, male, æt. 38. Mechanic. Fell 25 feet on to his head. Admitted comatose; bleeding from both ears and from nose; pupils equal, no reaction to light; breathing stertorous, pulse 80. Retention of urine. Following day urine passed naturally; noisy at night; condition otherwise unchanged; 2nd day rectal feeding; 4th day incontinence of urine; bowels relieved by enema. Pulse 119. Death on 5th day. P.M.—Extensive fracture of middle fossa, commencing at the level of the auditory meatus, extending along the anterior border of the temporal bone, across the sella turcica, and along the anterior border of the petrous bone to the other meatus. Fracture gaped to the extent of about $\frac{1}{2}$ inch. Effusion of blood on both occipital lobes and of left temporo-sphenoidal lobe.

5. W. D—, male, æt. 55. Fell from a ladder about 5 feet on to the back of his head; unconscious at first, but soon recovered. Walked into the hospital with the aid of a friend, though gait was staggering. On admission a large haematoma, size of an egg, over the occipital protuberance. Pupils unequal, right being the larger. Vomited. Shortly after he became unconscious, all his limbs flaccid, knee-jerk absent on right side, but present on left. Breathing shallow. Pulse 48, temp. 95. Operation: skull trephined over left parietal eminence; much dark blood and clot found beneath the dura, wound flushed out with sterilised water; bleeding point not found. Brain began to bulge through trephine hole. Dressed with cyanide. Breathing improved for a time, but pulse remained at 48. Death a few hours later, preceded by a rise of temperature to 102°. Patient did not regain consciousness. P.M.—In subdural space much black clot found over the left cerebral hemisphere: this part of the brain was lacerated. Small haemorrhages present in several parts of the brain. Damaged vessel not found, but thought to be a vein of the cerebral cortex. Fissured fracture ran across the occipital bone, reaching the groove for the right lateral sinus, but without injuring the sinus. Lungs emphysematous, very congested and œdematosus. Heart flabby, but valves competent.

6. A. M—, male, æt. 32. Fell off a ladder about 15 feet, striking his head on the asphalt. When he arrived at hospital he was conscious, but while being examined he had a violent convulsion which began on the left side, and he became unconscious. On examination small contused wound in right occipital region, with swelling over right mastoid. Pupils equal and reacted to light; conjunctival reflex present. Two hours later he was able to state his name. Shortly after blood and cerebro-spinal fluid escaped from nose; breathing became stertorous; coma set in, and he died a few hours later. P.M.—Occipital region of skull quite broken up, the fractures running towards the foramen magnum. A moderate quantity of blood outside the dura and a great deal more inside in the pia arachnoid, mainly on the left side. Left temporo-sphenoidal lobe and the tip of the frontal greatly contused and infiltrated with blood; right lobe of cerebellum smashed to a pulp; ventricles full of blood. Thoracic and abdominal viscera healthy.

7. J. C—, male, æt. 38. Carpenter. While intoxicated was walking along a narrow ledge, 15 feet from the ground, when he fell into the street. On admission comatose; breathing stertorous. Pupils reacted slightly to light, unequal, right being the larger. Knee-jerks absent. Three ribs on the right side fractured. Condition remained unchanged till death on 3rd day. P.M.—Third, 4th, and 5th ribs fractured; no injury to lung or pleura. Right kidney lacerated superficially near the hilus, with effusion of blood round the kidney; no free blood in peritoneal cavity. Fissured fracture extended from a point to the right of the torcular Herophili across the occipital bone and through the middle of the petrous bone into the middle fossa; the fissure passed through the groove for the right lateral sinus, but no haemorrhage had occurred. Brain not injured.

Simple fractures of base and vertex.—Males 2. D. 2.

Fatal cases.

1. S. C—, male, æt. 40. Carman. Patient fell off the dickey of a van, on to his head. On admission comatose. Pulse slow; left pupil contracted, right normal; eye reflexes absent. Left arm not moved so well as right. Left knee-jerk less brisk than that of right. No retention of urine. Patient unconscious until death on 2nd day. P.M.—Hæmatoma under scalp, extending over the whole vertex. Stellate fracture in right posterior fossa, radiating transversely into opposite posterior fossa, anteriorly to lateral sinus, laterally along the squamous portion of temporal bone, wounding posterior branch of middle meningeal artery; dura mater injured, a large collection of blood outside the dura. Extensive contusion of the right frontal and parietal lobes; left hemisphere uninjured. Thoracic and abdominal viscera normal.

2. H. S—, male, æt. 63. Postal guard. Fell 4 feet while loading a van; was unconscious for 20 minutes. On admission patient very excited, talked rapidly and in a rambling incoherent manner; no signs of external injury. Left pupil larger than right, but both reacted to light. Pulse 88, temp. 96.2°. In the evening he recognised his wife, but at night was very restless, gradually becoming unconscious. On following day signs of paralysis in left arm, and later in the left side of face; left leg unaffected. Operation: skull trephined over the right middle meningeal; bone very thin, fracture seen in this region. Dura mater bulged, incised, and a small clot found beneath. Brain much lacerated. Death on 4th day. P.M.—Fracture extended from the occipital protuberance along the inferior margin of right parietal bone to the great wing of the sphenoid. A large extradural collection of blood over the right occipital lobe. Brain much lacerated over right frontal lobe, and to a less extent over the lower part of right Rolandic area. Right middle cerebral artery blocked $\frac{3}{4}$ inch from commencement owing to atheroma. No softening of brain in surrounding area. Early interstitial nephritis.

Compound fracture of basisphenoid.—Unknown, male. Shot himself through the mouth with a pistol, and died a few minutes after reaching hospital. P.M.—Soft palate perforated; basisphenoid pulverised without

further injury to the skull. Base of brain much lacerated in the region of the right anterior perforated spot, the right optic nerve being scored, but not severed; finger could be passed into right lateral ventricle. Bullet could not be found. Internal organs healthy.

Fracture of face bone.

Superior and inferior maxillæ.—Males 2. C. 2. Fractured ribs and empyema 1; excision of rib. Lower jaw wired 2.

Fracture of inferior maxilla.—Males 3, female 1. C. 3. D. 1. Gutta-percha splint 3.

Fatal case.

C. C.—, male, æt. 56. Labourer. Kicked in the jaw, and admitted 6 hours later with wound over the left angle of the jaw. The inferior maxilla was fractured in two places, one on the left side just anterior to the last molar, and the other on the right side between the two bicuspids. It was decided to wire the fragments together. Chloroform given with Junker's apparatus, but shortly after the commencement patient became blue and stopped breathing. Artificial respiration and tracheotomy without success. P.M.—A considerable effusion of blood around the upper aperture of the larynx, and in the ary-epiglottic fold, also in the submucous tissue beneath the free edge of each vocal cord; no fracture of larynx. Right pleural sac completely obliterated by adhesions, the bronchial tubes much dilated. Early granular kidneys.

Fracture of nasal bones.—Males 2. C. 2. Fracture of superior maxilla 1.

Fracture of orbit.—Males 2. D. 2.

1. J. S.—, male, æt. 34. Labourer. Struck in the eye by a 16-foot plank of wood, which fell from an unknown height. On admission the right eye with the outer and lower walls of the orbit completely shattered; vomited, and complained of intense pain in right frontal and orbital regions. No loss of consciousness; no paralysis; much collapsed. Injection of strychnine and brandy. Operation: right eye removed, the orbit found to be fractured in many directions; loose pieces of bone and a large splinter of wood removed. The finger could then be passed into the antrum, into the nasal cavity, and into the cranial cavity. Brain protruded. Patient's condition would not admit of further operation. Intra-venous injection of saline 4 pints. Patient had fits for some hours, then gradually got weaker, and died 15 hours after accident. P.M.—Lesser wing of sphenoid had been driven in, and was lying in cranial cavity; cavernous sinus injured. Temporo-sphenoidal lobe of brain extensively torn; no fragments of bone inside the brain. Blood in the lateral ventricle. Heart and lungs normal.

2. A. E. H.—, male, æt. 2½. Brought to hospital moribund, and died before reaching the ward. P.M.—Small punctured wound of orbit just to the outer side of the cribriform plate. The corresponding right frontal lobe pierced for a considerable distance, and showed large effusion of blood. Thoracic and abdominal viscera healthy.

Cut throat.—Males 7. C. 4, D. 3. Suicidal 7. Above the hyoid 1; thyro-hyoid space 1; thyroid cartilage 2; superficial 3.

Fatal cases.

1. J. S—, male, æt. 65. Cabinet-maker. Patient had been suffering with severe pain down the back of the thighs, which induced him to cut his throat with a razor. Admitted with wound on the left side of the neck about $2\frac{1}{2}$ inches long, but quite superficial. Wound sutured. On 3rd day signs of right lobar pneumonia. Death on 5th day. P.M.—Dense malignant growth infiltrating the posterior part of the neck of the bladder and surrounding the entrance of the ureters. Left ureter obstructed and much dilated. Rectum and other parts of the pelvis not involved. Pelvis of left kidney dilated, dilatation of the calyces, and some wasting of the secreting structures. Liver fatty. Acute lobar pneumonia of right lower lobe.

2. J. M—, male, æt. 80. Labourer. Cut his throat with a razor, and had divided the structures down to the thyroid cartilage; the internal jugular vein exposed, but not injured. Patient had, however, lost a good deal of blood, and was much collapsed. Dressing put over wound. Intra-venous injection of saline 3 pints. Wound stitched up without an anaesthetic 9 hours later. Death next day. P.M.—Heart hypertrophied, valves competent. Marked atheroma. Lungs emphysematous. Contracted granular kidneys. Osteo-arthritis and gout.

3. U—, male. Admitted moribund after cutting his throat, and died in Casualty. P.M.—Deep wound at level of upper border of the thyroid cartilage about 4 inches long, a shaving of the thyroid being cut off. Pharynx opened. Great vessels intact. Thoracic and abdominal viscera healthy.

Abrasion of neck.—Male 1. C. 1.

Bullet wound of neck.—Male 1. C. 1. Bullet extracted from submaxillary region.

Foreign bodies in œsophagus.—Male 1, females 4. C. 3, D. 2. Tooth-plate 2; halfpenny 2; farthing 1. œsophagotomy 2.

Fatal cases.

1. M. E—, female, æt. 52. While eating her dinner she swallowed a tooth-plate with five false teeth attached; no hook on the plate. On admission the plate could be felt with œsophageal forceps about the level of the ericoid cartilage, but could not be withdrawn. Operation on following day; œsophagotomy; plate extracted, but part had evidently been broken off, and could not be felt; œsophagus sutured with silk; a plug left in the wound. Following day temperature rose to 102, breathing rapid; discharge from wound. Death on 2nd day after operation. P.M.—Wound unhealthy, some of the stitches in the œsophagus had given; on the anterior wall of the œsophagus, immediately above the incision, the mucous membrane had been divided for nearly an inch, probably by the edge of the tooth-plate. Tissues of the anterior mediastinum emphysematous. Posterior mediastinum infiltrated with pus. Confluent broncho-pneumonia of both lungs. Heart hypertrophied; valves competent. Marked atheroma.

2. L. S—, female, 38. Married. Impacted tooth-plate in œsophagus Septicæmia. *Vide Special Table III.*

Bullet wound of thorax.—Male 1. R. 1. Empyema; resection of rib ; bullet not found.

Fractured ribs.—Males 25, female 1. C. 23, D. 3. Emphysema 4; pneumothorax 2; pleurisy 3; fractured clavicle 1; fractured humerus 1; fractured spine of scapula 1. See also Ruptured Liver and Kidney.

Fatal cases.

1. H. M.—, male, æt. 53. Labourer. Fell off scaffold, his side striking gas bracket. Admitted collapsed, with fractured ribs on the left side, and surgical emphysema; fracture of left clavicle at junction of middle and outer thirds. Respiration laboured. On 3rd day left pneumothorax ; temp. 103°. Fifth day delirious, porter necessary. Sixth day expectoration of pus; no evidence of free fluid in pleura; temperature 103°, pulse 144. Death on 8th day. P.M.—On the left side the first eleven ribs were fractured, each in two places; small abscesses present at the sites of five of these fractures. Much coagulated blood was present in the left pleura, and lined the whole parietes; pleura contained a pint of serum. On the right side 1st and 2nd ribs were fractured close to the chondro-sternal articulation. Left lung collapsed, and its bronchi full of pus. Right lung contained excess of frothy mucus. Early interstitial nephritis.

2. A. C. W.—, male, æt. 5. Patient was run over by a van, the total weight of which was said to be 2 tons; the front wheel grazed the right side of the face, the hind wheel passed in a slightly oblique direction across the chest and over the left shoulder. Patient got up and walked to the edge of the pavement, and was then brought up to the hospital in a cab. On admission a lacerated wound of right cheek, extending from the angle of the jaw for about 2 inches, and the lip stripped from the lower jaw so that the finger could be passed into the submaxillary triangle. No fracture of rib could be felt. No injury to abdomen. An hour later difficulty in breathing commenced, and 3 hours later patient became collapsed, respiration very shallow and rapid, with surgical emphysema of chest and neck; it was then thought that the first rib had been fractured. Six hours after admission delirium, patient singing snatches of songs and hymns; death an hour later, at which time the emphysema had extended over the whole of the left side as far as the scrotum. P.M.—Each pleura contains nearly a pint of fluid blood. First rib fractured on the left side near its origin from the spine, and over the seat of the fracture was a large ragged rent in the pleura, and also extensive laceration of mediastinal tissues, free communication between the two pleuræ being established. Lungs compressed from pressure of blood, with haemorrhagic infiltration at the root. Other viscera healthy.

3. H. T.—, male, æt. 33. Carman. Crushed between van and gate-post. Admitted with fracture of 5th, 6th, and 7th ribs on the left side about the middle. Liver enlarged. Urine, trace of albumen, and slight trace of blood. Respiration rapid and feeble; pulse gradually failed. Death on 2nd day. P.M.—Nearly a pint of blood in left pleura; laceration of lung due to fracture of 7th rib. Pleura much thickened; lung small, tough, and

fibrous, very little alveolar substance being left. No evidence of tubercle. Right lung similar. Heart dilated and hypertrophied, valves normal. Interstitial cirrhosis of liver, which was much enlarged. Spleen enlarged. Small laceration of upper part of left kidney, but no haemorrhage around it.

Fractured spine.—Males 2. D. 2.

1. J. Y.—, male, æt. 31. Labourer. Fell from third story of a house on to his back with his head bent forward. Admitted with complete paralysis of both arms and legs; respiration carried on entirely by the diaphragm; anaesthesia below the region of the 3rd dorsal nerve, with pain about the level of the 5th dorsal. No control of defæcation or micturition. One-fortieth grain of strychnine injected into right arm, and patient complained of intense pain at time of puncture. No loss of consciousness. On following day area of anaesthesia diminished, the upper limit being at the level of the umbilicus. Death on 2nd day, temperature rising to 103·8°. P.M.—Spinal column completely fractured at the 7th dorsal vertebra, and the cord completely torn between the origin of the 5th and 6th nerves; posterior mediastinum lacerated. Fifth to 9th ribs inclusive fractured on the right side, and the 5th to 10th on the left. Right pleura contained 16 oz. and left 24 oz. of fluid blood. No wound of lung; both lungs œdematosus. No injury of abdominal viscera.

2. S. G.—, male, æt. 47. Carman. Fell off the wheel of his van, while alighting, on to his back; unconscious for a few minutes. On admission patient was conscious but dazed; alcoholic. Complained of pain in the lower cervical and upper dorsal regions, the pain running down the inner side of both arms. Sensation could not be tested on account of dazed condition. Complete paralysis of both legs, and partial paralysis of both arms; weak movement of flexion and extension being present at the elbows and wrists, but absent at the shoulders; abdominal muscles paralysed, but diaphragm still acting. No paralysis of muscles of face and eyes. Knee-jerks very brisk; ankle-clonus and patellar clonus absent. Complete retention of both urine and faeces. No deformity of spine felt. One day after admission pain in shoulders and arms still present; sensation present in all parts of the body except for patches of anaesthesia on the inner side of both forearms. Paralysis more marked in arms, but still some power of flexion of both elbows; no power of extension, pronation, or supination. Second day knee-jerks absent; constant vomiting; dilated stomach extending 2 inches below the umbilicus. Temp. 100·2°, pulse 80. Respiration 20. Retention of urine and faeces; other symptoms unaltered. Stomach washed out, rectal feeding. Fifth day stomach less dilated; vomiting ceased; urine passed incontinently, bowels only opened by enema. Temp. 102°, pulse 80, respiration 24. Ninth day paralysis of arms, legs, and abdomen unaltered. Sensation present all over the body; Urine still passed unconsciously. Twelfth day delirious with lucid intervals. Fingers kept flexed, with thumb closely applied to index finger; no power of extension; still slight flexion of elbow. Shoulders and legs absolutely paralysed, sore on back. Death on 17th day, preceded by temperature of 106·6°. P.M.—The bodies of the 4th and 5th cervical vertebræ

were crushed together without rupturing the posterior ligament ; the canal was not narrowed ; the anterior wall was a little irregular, with some discolouration beneath the ligament, but no evidence of pressure upon cord. The cord in the region of these vertebrae was softened, the softening commencing suddenly and corresponding to the fractured bodies. Nerve-roots uninjured. Lungs congested and œdematos. Stomach and intestines showed no sign of dilatation. Bladder much inflamed. Other viscera healthy.

Ruptured kidney.—Males 5. D. 5. Compound fracture of humerus and compound comminuted fracture of radius and ulna 1 ; fractured ribs and ruptured liver 1.

1. R. B—, male, æt. 12. Knocked down by a 'bus, the wheel of which skidded against his body. Admitted in a collapsed state. Left side of abdomen rigid and tender, no dulness ; had passed water just before admission. Pulse 100. Soon after admission he commenced vomiting, and seven hours after the accident there was shifting dulness in the left flank ; pulse 140 ; urine drawn off by catheter free from blood. Patient gradually got worse, and four hours later operation performed. Incision made parallel to left costal margin ; much blood found in the peritoneum and also behind it. Spleen found to be normal. Two bleeding vessels tied in the lienorenal ligament. Intra-venous infusion of saline, 16 oz. Patient much collapsed. Stimulants given. Death five hours later. P.M.—Peritoneal cavity contained a large quantity of blood, which was also effused behind the peritoneum over the greater part of the left side. In front of the left kidney was a tear in the peritoneum ; upper two thirds of kidney completely separated from lower third, and lying an inch away from it. Ureter torn through. Left twelfth rib fractured close to its head. No injury of thoracic viscera.

2. J. B—, male, æt. 27. Timber merchant. Right arm caught in the wheel of some machinery, and patient dragged round. Admitted with compound fracture of upper third of right humerus, compound comminuted fracture of right radius and ulna, the vessels being damaged ; tourniquet round arm. Numerous fractured ribs on right side. Much collapsed. Death three hours after admission. P.M.—Third to seventh ribs fractured 1 inch from their junction with their cartilages. Eighth to twelfth ribs fractured near their angles. Blood in pleura and peritoneum. Lung not injured. Right kidney lacerated near the pelvis. Other viscera healthy.

3. M. W—, male, æt. 58. Flagman. Knocked down by a railway engine, and admitted in an unconscious condition. Face much lacerated, a deep wound over the left malar bone and also over the left eye. Orbital bones fractured. No vomiting. No haematuria. Patient recovered consciousness twelve hours afterwards, but pulse very feeble. Fractured ribs on left side. Following day general condition improved, chloroform given in order to clean up face wounds, which were very dirty ; forehead wound found to extend into the frontal sinus, but not into the cranial cavity ; nasal bone of left side broken into small pieces, and floor of the orbit damaged. Malar bone fractured in several places. Fragments removed and wound

thoroughly cleaned. Five minutes after administration of chloroform had ceased patient suddenly stopped breathing; tracheotomy and artificial respiration without success. P.M.—All the true ribs on the left side from the fifth downwards were fractured at their greatest convexity; second and third on the right side fractured in the anterior axillary line. Lungs uninjured. Left kidney torn transversely about its middle; effusion of blood into peritoneum and into perirenal tissues. Superficial longitudinal rupture on under surface of left lobe of liver. Brain healthy.

4. J. V—, male, æt. 14. Shop boy. Fell a distance of 3 feet on to a triangular iron bar, which struck him in the right side between the ilium and the ribs. Admitted much collapsed, with great pain in the right loin. On percussion, area of dulness in right lumbar region behind, but not extending forwards. No shifting dulness. Almost pure blood *per urethram*. Intravenous infusion of saline 2 pints, without much improvement. Pulse 160, temp. 96°. Slight improvement during night, pulse falling to 120 and temperature reaching 98°. Area of dulness not increased. Following afternoon abdomen began to be distended; respiration very rapid, 80 to the minute, pulse 160, feeble. Urine passed during the day free from blood. Patient became very restless, and died during the night. P.M.—Right kidney completely ruptured, the upper two thirds being separated from the lower third; ureter uninjured. Abdomen contained 4 oz. of fluid blood; small subperitoneal haemorrhages in the intestines. Retro-peritoneal haemorrhage in right loin, extending over to the left side and into the right iliac fossa. Right pleura contained 16 oz. of fluid blood; no injury to lung; no fractured ribs. No peritonitis. Other organs healthy.

5. T.J.D—, male, æt. 3 years 9 months. Knocked down by a van, one wheel of which passed over his abdomen. Admitted pale and cold with a somewhat rigid and tender abdomen. Dulness in the left flank. Right flank resonant; liver dulness absent. Vomiting. Pulse 160, temp. 98·8°. A catheter passed, a few drops of blood withdrawn, but no urine. One and a half hours after the accident abdomen opened in the mid-line; retro-peritoneal haemorrhage found extending from left lumbar region; opening enlarged by transverse incision at right angles to original incision. Left kidney found to be completely divided, and was excised. Bladder distended with saline, but found to be uninjured. Gauze plug inserted to the left renal region, and the abdominal wall sutured *en masse* with silkworm-gut sutures. Intra-venous infusion and also subcutaneous infusion during operation. During the night rectal injections of saline, 5 oz. given every half-hour. Bowels opened; patient vomited three times. Wound dressed on the following day, much oozing; a knuckle of small intestine was protruding; this was washed with sterilised water and returned. During afternoon abdomen became distended and tender; vomiting; temp. 102·8°, pulse 140. Death on 2nd day. P.M.—Cavity from which kidney had been removed contained much shreddy material. General peritonitis. Other organs uninjured.

Ruptured liver.—Males 2, females 4. C. 1, D. 5. Ruptured spleen 1, ruptured kidney 1; fractured ribs 1; cirrhosis of liver 1.

Fatal.

1. F. D—, male, æt. 8. Run over, and brought into Casualty moribund. P.M.—Abdomen contained about $1\frac{1}{2}$ pints of blood, clotted and fluid. On under surface of right lobe of liver were three short superficial ruptures, while at the line of demarcation between the two lobes the liver was almost completely divided into two. No other organs injured.

2. W—, male. Run over, and brought to hospital moribund, dying before admission. P.M.—A pint of blood in peritoneal cavity. Upper surface of right lobe of liver crushed and torn in every direction. Liver fatty. No other abdominal injury. Heart hypertrophied; muscle fatty. Third to eighth ribs fractured on right side; pleura and lung uninjured.

3. L. W—, female, æt. 5. Run over by a van, the wheel passing over her abdomen. Vomiting. Pulse rapid and feeble; much shock. Death a few hours after admission. P.M.—Abdominal cavity full of dark blood. Liver almost divided into two immediately to the right of and parallel to the falciform ligament. Other viscera healthy. No fractures.

4. R. W—, male, æt. 49. Drayman. Run over by a cart. Admitted much collapsed, pulse being almost imperceptible. Abdomen very tender, but not rigid. No shifting dulness. Vomited. Died a few hours after admission. P.M.—Large lacerated wound of the under surface of the liver, extending from the middle of the right lobe transversely to just beyond the mid-line. Liver enlarged and fatty. Small rupture of capsule of spleen. Laceration of upper part of left kidney. Chronic interstitial nephritis of both kidneys. No injury to intestines. Heart fatty.

5. A. C. H—, female, æt. 25. Run over, and died in Casualty. P.M.—Liver completely pulped, one portion being found in the pelvis, another in left iliac fossa, and another free near the umbilicus. Liver fatty and very friable; very small amount of haemorrhage. Right kidney ruptured about the middle. Other abdominal viscera uninjured. Marked phthisis of both lungs.

Ruptured duodenum.—H. E—, male, æt. 26. Carman. Struck in the epigastrium by the centre pole of a van, and squeezed by it against the tailboard of another van. Admitted somewhat collapsed, complaining of pain in the epigastrium; bruising of abdominal wall between the sternum and umbilicus. Abdomen moved well, but was tender, especially in the epigastrium. No shifting dulness; liver dulness normal; patient vomited several times just after admission, the vomit being bile-stained but free from blood. Urine normal. On following day patient still had abdominal pain; slight distension of abdomen; occasional vomiting; bowels opened, no blood; 4 oz. of urine passed. Temp. 99° , pulse 84. 2nd day abdomen still distended, stomach prominent. Liver dulness commenced at fifth rib, and extended downwards for 2 inches. Abdomen moved well, but still tender. Vomiting rather less; enema given with fair result; 34 oz. of urine passed. Temp. 100° , pulse 100. 3rd day symptoms unchanged, except that vomiting was much less troublesome. Ol. Ricini $\frac{3}{4}$ j given. Afterwards vomiting much worse, and pain more acute; distension marked; two well-formed stools after enema. Operation 4th day. Incision in right

iliac fossa. Intestines appeared healthy, except for slight subperitoneal haemorrhages; no free fluid; no lymph. On introduction of hand some thickening felt in posterior wall of the abdomen in the region of the right kidney. Patient much collapsed, and died five hours after operation. P.M.—Signs of localised peritonitis in the upper part of the abdomen round the duodenum. Three rents found in the third part of the duodenum. A considerable effusion of blood in the retro-peritoneal tissue in the region of the duodenum and round the right kidney. Other organs healthy.

Traumatic rupture of jejunum.—M. R., female, æt. 29. Married. Knocked down and run over by a horse and trap. Admitted to hospital one hour after accident, walking in. On admission slight pain and tenderness in the abdomen; abdomen moved well; no dulness; liver dulness normal; pulse 86. Three hours after admission severe abdominal pain; abdominal wall rigid, movement bad, slight dulness in left flank; vomiting; pulse 120; operation six hours after the accident. Incision in the mid-line; two holes, each about the size of a shilling, were found in the jejunum about 4 inches from its commencement; one of these was situated at the mesenteric attachment, partly involving the mesentery, the other on the opposite side of the gut; mucous membrane bulged through these holes so as to prevent the escape of faeces to a large extent; rents stitched with Lembert sutures of fine silk. Other intestines somewhat inflamed. Abdominal cavity washed out with warm sterilised water, and abdominal wall sutured with silkworm gut. Second day temp. 99°, pulse 96. Rectal feeding; beef tea in small amounts commenced by mouth. Rectal feeding stopped on 8th day. Ninth day wound dressed, stitches removed. Twelfth day severe abdominal pain; pulse 160, very feeble; temp. 100°; no sickness; abdomen rigid and very tender. Abdomen reopened. Small bowel, which was adherent to scar, injured and resutured. Intestines matted and covered with flakes of lymph and pus; free gas in the peritoneum; old wounds in the jejunum quite healed, but just below them for about an inch the peritoneum was stripped off the intestine, and in the middle of the stripped portion was a small hole from which gas escaped. The hole stitched up and the peritoneum sutured over it with Lembert's sutures of fine silk. Abdominal cavity irrigated with warm sterilised water, and Keith's drainage-tube put down into the pelvis. Thirteenth day much pain; discharge slight, but offensive; temp. 101·6°, pulse 140. Vomited several times after operation. Rectal feeding. Fifteenth day tube removed; constant pain, only slightly relieved by morphia. Temp. 101·4°, pulse 96. Bowels had been opened daily by enema; catheter had to be passed regularly owing to retention. Twentieth day pain much better, small quantities of beef tea by mouth; slight discharge from wound, but not so offensive. Bowels opened naturally. Temp. 98°, pulse 100. Twenty-fifth day rigor, which lasted for a few minutes; general condition much better. Urine passed naturally. Signs of hypostatic congestion of lungs. Thirty-first day rectal feeding stopped. Thirty-eighth day bread and butter. Steady improvement until the time of discharge on the 60th day, when the wound had quite healed.

Readmitted twenty-four days later, complaining of severe pain on the

left side of the abdomen, shooting down the left leg; pain caused great perspiration, and was intermittent in character, lasting for about an hour. Bowels opened regularly. Abdomen moved well, and nothing abnormal detected. Tongue coated. Trace of albumen in urine. Five days after admission temperature rose to 102° , and patient had a rigor. Much pain. Bowels had been opened once naturally, at other times only by enema. Operation on 5th day. Abdomen opened through old incision; a part of the small intestine much distended; this was found to be due to obstruction caused by an adhesion between two loops. Band divided. Intestine punctured, and a quantity of flatus and faecal matter let out; a drachm of magnesium sulphate injected, and bowel re-sutured; for eighteen hours patient was much better, bowels being opened by enema, followed by a natural stool. Then pain commenced again and gradually increased, vomiting started, and abdomen became much distended; 2nd operation twenty-four hours after the first. Wound reopened; intestines much distended and somewhat inflamed; multiple punctures of large and small intestine. Abdominal cavity irrigated with normal saline, and abdomen closed. Magnesium sulphate, 1 drachm given every two hours; bowels opened four times in first twenty-four hours. Pain relieved. Pulse 124, temp. $102\cdot6^{\circ}$. Uninterrupted recovery; bowels opened regularly by the aid of an occasional dose of calomel. Discharged cured on 48th day.

Fractured pelvis.—Males 4, female 1. C. 4, D. 1. Ilium 4; ischial ramus 1.

Fatal case.—F. M.—, male, æt. 42. Drayman. Knocked down by a bus, the wheel of which passed over his body. On admission, in the right groin were three wounds running parallel to Poupart's ligament, but only involving skin and subcutaneous tissues; comminuted fracture of ilium about its centre. Urine drawn off with catheter, free from blood. Wounds cleaned and stitched up. No signs of abdominal injury. Death on following day. P.M.—Fracture of ilium running from below the anterior superior spine directly backwards, but not completely traversing the bone. On opening the abdomen, 10 oz. of fluid blood in the pelvis, which had come from extensive rents in the lower end of the mesentery. Appendix 6 inches long, and its mesentery had been torn; higher up was a rent 10 inches long, extending from the ileum to the spinal attachment of the mesentery. No injury of intestine or bladder. Marked fatty degeneration of liver. Heart fatty.

Ruptured urethra.—Males 5. C. 5. Suture 5.

INJURIES OF UPPER EXTREMITY.

Contusions and wounds of arm and forearm.—Males 6, females 3. C. 9. Ligature of radial artery 1; Thiersch grafts 1.

Wounds of hand.—Male 1, females 2. C. 3. Amputation of forearm 1.

Cut tendons.—Males 6, females 2. C. 8. Divided flexor sublimis and flexor profundus 5; flexor carpi radialis 1; extensor communis digitorum 2. Divided ulnar nerve 1.

Treatment.—Suture.

Foreign body.—Males 3, females 5. C. 7, U. 1. Needle in hand 4; bullet in hand 3; glass in hand 1. Extraction in 7.

Divided median nerve.—Males 5. C. 2, R. 2, U. 1. Recent 1; old 4; cut tendons 2. “At own request” 1. Immediate suture 1; resection and suture 2; amputation 1.

Divided radial nerve.—Female 1. C. 1. Recent. Cut tendons. Immediate suture.

Divided ulnar nerve.—Males 4, females 2. C. 5, R. 1. Recent 4; old 2; cut tendons 4; suture 4; resection and suture 1; resection and nerve grafting 1.

Injury to brachial plexus.—Males 3. R. 3. Same case readmitted. Previous fracture of clavicle.

Treatment.—Separation of nerves from scar tissue, followed by massage and electricity; later amputation at shoulder-joint with removal of nerves at their spinal roots.

Injury to cervical plexus.—Male 1. R. 1. Massage.

Injury to spinal accessory.—Female 1. R. 1. Previous excision of glands of neck.

Dislocation of humerus.—Males 3, females 2. C. 5. Subcoracoid 5. Ruptured axillary artery 1. Fractured fibula 1. Reduction under anaesthesia a few hours after accident 3; without anaesthesia 1; ligature of axillary artery 1.

Dislocation of radius and ulna.—Males 4. C. 3, R. 1. Backwards 2; outwards 2. Compound 2; fracture of internal condyle 1; fracture of radius and ulna 1. Recent 3; old 1. Reduced under anaesthetic 3.

Dislocation of phalanges.—Males 2. C. 2. Metacarpo-phalangeal of thumb 1; metacarpo-phalangeal of index 1. Reduced under anaesthetic 2.

Fractured clavicle.—Males 6. C. 5, R. 1. Readmitted 1. Comminuted 2. Compound 1. Fractured sternum 1. Sayre’s strapping 5. Excision of projecting bone 1.

Fracture of scapula.—Male 1. C. 1. Fracture through spine; bandage.

Fractured humerus.—Males 5, females 2. C. 7. Separation of upper epiphysis 1; fractured radius and ulna 1; fractured fibula 1. Surgical neck 5; upper third 1; lower third 1. Internal angular and lateral splints 1; plaster of Paris 5.

Compound comminuted.—Males 2. C. 1, D. 1. Compound fracture of tibia and fibula 1. Plaster of Paris splint 1.

Fatal case.—A. G., male. Soldier. Fell between the train and the platform; admitted with compound comminuted fracture of right humerus, and of right tibia and fibula. Collapsed; infusion of saline. Death in 4 hours. P.M.—Right elbow reduced to pulp, and the greater part of the humerus comminuted; right foot and ankle completely crushed. Pneumothorax on left side; lung torn in front near its apex; pleura contained a pint of blood. No injury to ribs on that side, but on right side fracture of 1st and 2nd. Abdominal viscera healthy.

Fractured olecranon.—Males 3, female 1. C. 4. Wired 2; internal angular splint 2.

Fractured radius.—Male 1. C. 1. Middle third. Carr's splint.

Fractured ulna.—Females 2. R. 2. Same case. Dislocation of head of radius.

Compound fracture of metacarpus.—Males 5, female 1. C. 6. Cut tendons and fractured phalanx 1. First 1; 2nd 1; 4th and 5th 2; all 2. Amputation of forearm 1; trimming and suture 5.

Compound fracture of phalanx.—Males 3. C. 3. Amputation at meta-carpo-phalangeal joint 2. Splint 1.

INJURIES OF LOWER EXTREMITY.

Wounds and contusions.—Males 15, females 8. C. 23.

Laceration of tendo Achillis.—Male 1. C. 1.

Foreign body.—Males 5, females 6. C. 7, U. 4. Needle 9; bullet 2. Skiagram and extraction 7.

Divided anterior tibial nerve.—Male 1. R. 1. Sutured.

Traumatic synovitis of knee.—Males 5. C. 5. Rupture of internal lateral ligament 2.

Penetrating wounds of knee.—Males 4, female 1. C. 5. Septic arthritis 5; arthrotomy and irrigation 5. Splints.

Dislocation of hip.—Male 1. C. 1. Sciatic; reduction under anaesthetic.

Dislocation of knee.—Male 1. R. 1. Transferred to Home.

Dislocation of patella.—Male 1. C. 1. Outwards. Rupture of quadriceps. Reduction with plaster-of-Paris splint.

Dislocation of foot.—Male 1. Upwards. No fracture of tibia or fibula. Reduction under anaesthetic.

Dislocation of astragalus.—Male 1. C. 1. Forwards and outwards. Astragalus excised.

Dislocation of hallux.—Male 1. C. 1.

Fractured shaft of femur.—Males 40, females 15. C. 53, R. 2. Direct violence 20; indirect violence 25. Transverse 5. Previous fracture 1. Upper third 20; middle third 10; lower third 20; internal condyle 1; double 2; fracture of tibia and fibula 1; fracture of tibia 1; fracture of fibula 2; fracture of humerus 1; subcoracoid dislocation of humerus 1; dementia 1.

Treatment.—Plaster of Paris only 10; plaster of Paris, long outside and extension 37; long outside and extension 1; Hodgkin's splint 2; extension and massage 4; massage 1. Shortening noticed on discharge $\frac{1}{8}$ inch 1; $\frac{1}{4}$ inch 3; $\frac{1}{2}$ inch 8; $\frac{3}{4}$ inch 5; 1 inch 7; $1\frac{1}{2}$ inches 1; $2\frac{1}{4}$ inches 1; no shortening 9.

Compound fracture of femoral shaft.—Male 1, females 2. C. 3. Comminuted fracture of tibia and fibula 1; varicocele 1. Lower third 3.

Treatment.—Suture, extension, and plaster-of-Paris splints.

Comminuted fracture of femoral shaft.—Males 2. C. 2. Lower third 2.

Treatment.—Extension, plaster-of-Paris splint, and long outside.

Compound comminuted fracture of femoral shaft.—Male 1, female 1. D. 2.

1. A. F—, male, æt. 47. Carman. Run over by a dust-cart, which passed over both legs. Admitted collapsed, with extensive compound comminuted fracture of right femur and compound comminuted fracture of left tibia and fibula; much haemorrhage from wound in the right popliteal space. Immediate operation advised, but patient refused. Tourniquet put round the thigh; left leg dressed with cyanide and put in splints. Amputation performed through centre of thigh by circular method on the following day. Intra-venous infusion of saline. Death a few hours later. Popliteal vein found to be ruptured, and at the seat of rupture a phlebolith was found. P.M.—Organs healthy.

2. E. M—, female, æt. 71. Married. Run over by a van. Admitted with compound comminuted fracture of right femur about the middle of the shaft, and comminuted fracture of inferior maxilla. Wounds cleansed and sutured; extension and long outside applied to femur; gutta-percha splint for lower jaw. Infusion two pints. Hypostatic pneumonia. Death on 8th day. P.M.—Heart enlarged, calcareous thickening of the cusps of the mitral; two cusps only for the aortic valve; these much thickened with calcareous deposit, being almost $\frac{1}{2}$ inch thick at the base; valve quite incompetent. Lower lobe of right lung solid from hypostatic pneumonia; rest of lung very oedematous. Other viscera healthy.

Fracture of femoral neck.—Males 4, females 7. C. 6, R. 5. Fracture

near head 6; near trochanter 5. Fractured ribs and spinous process of second lumbar vertebra 1; pneumonia 1. $\frac{1}{3}$ inch shortening 1; $\frac{1}{2}$ inch 1; $\frac{3}{4}$ inch 1; 1 inch 1; $1\frac{3}{8}$ inches 1; no shortening 1.

Treatment.—Extension and double inclined plane 1; Hodgkin's splint 1; extension and plaster-of-Paris splint 4; extension and long outside 3; sand-bags 2.

Fracture of patella.—Males 13, females 5. C. 13, R. 4, D. 1. Right 11, left 7; direct violence 6; indirect violence 12; stellar 1; transverse 17; compound 1. Previous fracture of same patella 2. Fatal case. *Vide Special Table III.*

Treatment.—Wiring 10; suppuration 4; remainder by Macintyre, ice-bag, and plaster-of-Paris splint.

Fractures of tibia and fibula.—Males 65, females 25. C. 86, R. 4. Readmitted for ununited fracture 4. Right 41; left 48; not stated 1. Direct violence 22; indirect violence 68. Upper third 9; middle third 6; lower third 46; Pott's 19; remainder tibia and fibula fractured at different levels. Fractured ribs 1; compound fracture of proximal phalanx of thumb 1. Radical cure for reducible inguinal hernia 1.

Treatment.—Neville's splint followed by plaster-of-Paris splint 2; Macintyre followed by plaster of Paris 1; remainder by plaster-of-Paris splints.

Comminuted fractures of tibia and fibula.—Males 2. C. 2. Plaster-of-Paris splints.

Compound fractures of tibia and fibula.—Males 7, females 3. C. 9, D. 1. Direct violence 7; indirect violence 3; upper third 1; middle third 3; lower third 4; tibia and fibula fractured at different levels 2. Right 6; left 4. Compound fracture of femur 1; simple fracture of tibia and fibula of the other side 1.

Treatment.—Amputation of thigh 2; wound cleaned under anæsthetic and plaster-of-Paris splint applied 6; Neville's splint 2.

Fatal case.

M. A.—, female, æt. 56. Run over by a tram-car, which passed over both legs. Admitted collapsed, with compound fracture of left tibia and fibula about the middle, and also a compound fracture of lower third of femur of the same side, a deep wound extending from the middle of the leg to well above the knee, the knee-joint being disorganised; comminuted fracture of right tibia and fibula just below the knee-joint, but not involving the joint. Left leg amputated through the lower third of the thigh a few hours after admission. Death 18 hours later. P.M.—Right lung bound down by dense adhesions, and its base in a fibroid condition. Liver and kidneys fatty.

Compound comminuted fractures of tibia and fibula.—Males 2, females 2. C. 2, D. 2. Right 3; left 1. Upper third 1; middle third 1; lower third 2. Direct violence 2; indirect violence 2. Pneumonia 1; delirium tremens 1.

Treatment.—Amputation through upper third of leg 1; wiring 1; cleaning under anæsthetic and plaster-of-Paris splint 2.

Fatal cases.

1. P. L—, male. Platelayer. Run over by a railway train. On admission a compound comminuted fracture of right tibia and fibula in the lower third. The parts in this region completely smashed and the bones splintered. Leg amputated through upper third. Patient did well until the 6th day, when temperature began to rise, reaching 101·6°, and two days later 104·4°. Wound healthy. Signs of pneumonia in left lung. Death on 9th day. P.M.—A patch of pneumonia as large as an orange in the centre of the upper lobe filled with grey granular deposit; around this patch of consolidation was a consolidated area redder and firmer than central part, and appeared to be catarrhal pneumonia. Rest of lung and also left lung congested and œdematosus.

2. H. A. W—, female, æt. 52. Slipped off the kerb and fell with her foot under her. Admitted with compound comminuted fracture of left tibia and fibula, about 4 inches above the malleoli; bones projecting through. Wound cleaned and edges pared, the two ends of tibia united by one perforating and one circular wire; a skin flap raised from the calf and brought over the seat of the fracture. Limb put up in plaster-of-Paris splint. Delirium tremens developed on 2nd day, death occurring on the 4th. P.M.—Wound satisfactory. Both lungs œdematosus. Cloudy swelling of liver. Kidneys normal.

Fractured tibia.—Males 12, females 6. C. 18. Right 9; left 9. Direct violence 7; indirect violence 11. Upper third 2; middle third 7; lower third 5; internal malleolus 3; outer tuberosity 1. Old ankylosed knee 1.

Treatment.—Plaster-of-Paris splints in all.

Compound fracture of tibia.—Male 1. C. 1. Direct violence. Lower third. Antiseptics. Plaster-of-Paris splints.

Fractured fibula.—Males 10, females 5. C. 15. Direct violence 5; indirect violence 10. Middle third 1; lower third 14, including 4 Pott's fractures. Plaster-of-Paris splints in all.

Compound comminuted fracture of metatarsal.—Male 1. C. 1. 2nd, 3rd, and 4th. Cleaned up under anæsthetic. Thiersch grafts.

Compound fracture dislocation of first metatarsal.—Male 1. C. 1. Hallux became gangrenous. Amputation at metatarso-phalangeal joint.

SPECIAL TABLE I.—

INGUINAL HERNIA.—*a. Strangulated*

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Duration of strangulation	Structure of hernia.
1	—	M.	15 months	R.	6 months	4 hours	?
2	Moulder	M.	43	R.	Years	4 hours	?
3	Painter	M.	39	L.	3 years	12 hours	?
4	Carver	M.	56	L.	6 years	2 hours	?

b. Strangulated Irreducible

5	—	M.	42	L.	4 years	2 hours	?
6	Potman	M.	30	R.	7 months	4 hours	?

c. Strangulated Irreducible

7	<i>Nil</i>	M.	43	R.	14 years	13 hours	Enterocoele
8	Composer	M.	37	R.	32 years	2 days	Congenital
9	Shampooer	M.	37	L.	5 years	2 hours	Enterocoele
10	Shopman	M.	24	R.	2 years	8 hours	Epiplocele

HERNIA.*Irreducible. No Operation.*

Treatment.	No. of days in hospital.	Result.	Remarks.
Hot bath, taxis. Truss	1	C.	
Hot bath, taxis. Truss	2	C.	
Hot bath, morphia, taxis. Truss	2	C.	
Hot bath, taxis. Truss	1	C.	

Reduction followed by Radical Cure.

Reduction after hot bath. Radical cure 8 days later. Sac ligatured and ablated with silk. Macewen's stitch with silkworm gut	19	C.	
Reduced under anaesthetic. Bassini's operation with silkworm gut	10	C.	Radical cure performed immediately after reduction.

Herniotomy and Radical Cure.

Small gut in good condition replaced. Bassini's method with silk	18	C.	
Omentum excised. Sac ablated and ligatured with silkworm gut. Mac- ewen's stitch with kangaroo tendon	15	C.	
Slightly congested small gut re- placed. Sac ligatured and ablated with silk. Pillars sewn with silk- worm gut	15	C.	
Omentum excised. Sac ligatured and ablated with silk. Pillars sewn with silkworm gut	15	C.	

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Duration of strangulation.	Structure of hernia.
11	Labourer	M.	40	R.	3 years	12 hours	Congenital
12	Labourer	M.	50	L.	3 years	18 hours	Enteroe-epiplocele
13	Cabman	M.	65	R.	3 years	2 days	Enterocele
14	Labourer	M.	21	R.	16 years	1 day	Congenital
15	Labourer	M.	60	L.	27 years	10 hours	Enteroe-epiplocele
16	Watchman	M.	49	R.	12 years	2 hours	Enterocele
17	Labourer	M.	33	R.	1 week	2 hours	Enterocele
18	Painter	M.	19	R.	1 day	1 day	Congenital
19	Bricklayer	M.	56	L.	30 years	7 hours	Enterocele
<i>d. Strangulated Irreducible.</i>							
20	—	M.	88	R.	3 years	2 days	Enterocele

Treatment.	No. of days in hospital.	Result.	Remarks.
Congested and oedematous small gut replaced. Sac divided, a portion sewn over the testicle, the rest excised up to the neck, including the extra sac. Macewen's stitch with silkworm gut	15	C.	Properitoneal sac behind pubes, which contained clear fluid.
Small gut and omentum replaced. M. Banks's operation with silkworm gut	13	C.	Gut only slightly congested.
Small gut replaced. Bassini's operation with silkworm gut throughout	13	C.	Direct hernia. The two parts of the loop were firmly adherent, and the neck of the loop was tightly nipped by the ring. Adhesions divided.
Congested cæcum replaced. Sac ligatured and ablated with silk. Pillars sewn with silkworm gut	18	C.	
Omentum and small gut replaced. Bassini's method; silk for sac, silkworm gut for canal	15	C.	
Small gut replaced. Bassini's method; silk for sac, silkworm gut for canal	20	C.	
Gut replaced. Bassini's method with silkworm gut throughout	18	C.	
Small gut replaced. Bassini's method with silk for sac, silkworm gut for canal	28	C.	Gut much congested; turbid fluid in sac. Sac divided and sutured over testicle.
Small gut replaced. Bassini's method with silkworm gut	15	C.	
Gut reduced	15	C.	No anæsthetic given on account of age.

Herniotomy only.

Gut reduced	15	C.	No anæsthetic given on account of age.
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FEMORAL

a. Strangulated Irreducible.

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Duration of strangulation.	Structure of hernia.
1	—	M.	80	R.	Years	4 hours	?
<i>b. Strangulated Irreducible.</i>							
2	Gardener	M.	48	R.	4 years	5 days	Enterocoele
3	Shoemaker	M.	60	L.	24 hours	24 hours	Enterocoele
4	Gardener	M.	67	R.	9 years	36 hours	Entero-epiplocele
5	Labourer	M.	67	L.	25 years	1 day	Epiplocele
6	House-work	F.	72	L.	5 months	6 hours	Enterocoele
7	House-work	F.	49	R.	6 years	8 hours	Entero-epiplocele
8	—	F.	62	L.	6 years	8 hours	Enterocoele
9	—	F.	50	L.	2 years	2 days	Enterocoele
10	House-work	F.	74	R.	2 years	4 days	Entero-epiplocele
11	—	F.	73	R.	Years	2 days	Entero-epiplocele
12	House-work	F.	39	L.	6 years	1 day	Epiplocele
13	Laundress	F.	46	R.	4 years	3 days	Enterocoele
14	Nurse	F.	43	R.	10 years	36 hours	Enterocoele

HERNIA.*No Operation.*

Treatment.	No. of days in hospital.	Result.	Remarks.
Hot bath, taxis. Truss	3	C.	

Herniotomy and Radical Cure.

Small intestine much congested replaced. Sac ligatured with silkworm gut and sutured to Poupart's ligament	4	D.	Gut much congested, but otherwise appeared healthy. Constant vomiting till death. P.M.—Two inches of small gut, about $3\frac{1}{4}$ yards from ileo-cæcal valve, gangrenous; perforation; faecal matter and pus in abdominal cavity.
Small gut replaced. Sac ablated. Suture of ring with silkworm gut	13	C.	
Omentum excised, gut returned. Sac transfixated and ablated with silk. Poupart's ligament sutured to pectineal fascia with silk	15	C.	Sac contained a large amount of omentum, which was infiltrated with blood, and a small knuckle of congested gut.
Omentum replaced. Sac ablated; pectineal flap. Silkworm gut used	27	C.	
Small intestine replaced. Sac ablated and ligatured with silk	16	C.	
Omentum ligatured and removed. Sac ablated. Ring sewn with silkworm gut	52	C.	Bladder wounded during operation and sutured.
Congested intestine replaced. Sac ablated. Ring sutured	13	C.	
Large intestine reduced itself, except for an appendix epiploica. Sac twisted, brought through Poupart's ligament, and sutured to tissues round the ring	14	C.	Sac contained much serous fluid.
Congested small gut and omentum replaced. Sac ablated	22	C.	
Omentum excised, small gut replaced. Sac ablated and sutured with silkworm gut. Ring closed with silkworm gut	31	C.	Large mass of omentum, much infiltrated.
Omentum excised. Sac ablated with silk. Ring closed with silkworm gut	16	C.	
Small gut replaced. Sac ablated with silk. Ring closed with silkworm gut	25	C.	Gut only slightly congested.
Small gut replaced. Sac ablated with silk. Ring closed with silkworm gut	15	C.	

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Duration of strangulation.	Structure of hernia.
15	Nurse	F.	59	R.	5 months	3 days	Partial enterocele
16	House-work	F.	80	R.	20 years	48 hours	Enteropipolele

c. Strangulated Irreducible.

17	—	F.	50	R.	4 days	36 hours	?
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d. Strangulated Irreducible.

18	House-work	F.	50	R.	1 year	?	Enterocele
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e. Strangulated Irreducible.

19	—	F.	65	R.	2 years	6 days	Enterocele
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f. Strangulated Irreducible.

20	—	F.	45	R.	6 weeks	48 hours	Enterocele
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Treatment.	No. of days in hospital.	Result.	Remarks.
Small gut replaced. Sac ablated. Ring closed	12	C.	
Small intestine and omentum reduced. Sac ablated with silk. Ring closed with silkworm gut	2	D.	Previous operation for strangulated femoral hernia 12 years before. Strangulation by band running across the sac. P.M.—Bowel healthy, no signs of sepsis. Lungs: atrophic emphysema, arrested tubercle to considerable degree; contracted granular kidney.

Reduction followed by Radical Cure.

Sac ablated with silkworm gut; pecten fascial flap	20	C.	Hernia reduced itself under anesthetic
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Herniotomy only.

Gut replaced with difficulty. Gauze drain put down to gut	7	C.	Gut purple. Gimbernat's ligament completely, and Poupart's partially divided.
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Herniotomy, Artificial Anus, and Anastomosis.

Gut opened in sac. Mid-line incision and lateral anastomosis with Murphy's button	1	D.	Gut gangrenous, opened and stitched to edges of wound. P.M.—In femoral wound was a piece of bowel 15 inches from cæcum, which was gangrenous; lateral anastomosis between ileum and jejunum; union firm, no leakage; no peritonitis.
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Herniotomy, Resection, and Suture.

Three inches of small intestine excised, and end-to-end anastomosis by continuous suture. Sac ablated with silkworm gut; gauze drain. Pectenous fascia sutured to Poupart's ligament with silkworm gut	21	C.	Small intestine ulcerated at point of constriction, and loop in the sac much congested.
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UMBILICAL

a. Strangulated Irreducible.

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Duration of strangulation.	Structure of hernia.
1	—	F.	56	—	10 years	2 days	Enteroeiplocele
2	House-work	F.	51	—	15 years	7 days	Enteroeiplocele, ventral

b. Strangulated Irreducible.

3	Servant	F.	50	—	18 years	3 days	Epiplocele
4	Charwoman	F.	47	—	11 years	5 hours	Enteroeiplocele
5	Beer retailer	M.	71	—	10 years	24 hours	Enteroeiplocele
6	House-work	F.	61	—	Years	1 week	Enteroeiplocele
7	—	F.	76	—	Years	4 days	Enteroeiplocele, ventral
8	—	F.	56	—	10 years	7 hours	Enterocele
9	Laundress	F.	61	—	8 years	5 hours	Epiplocele

HERNIA.*Herniotomy.*

Treatment.	No. of days in hospital.	Result.	Remarks.
Omentum and intestine replaced. Sac excised and abdominal wall sutured. Abdominal belt	25	C.	Hernia had been strangulated 3 years and also 2 years previously. Readmitted 6 weeks later with hernia again strangulated. See Table b.
Omentum excised. A band running across sac divided. Sac not ablated. Contents not reduced	54	R.	A strong band as thick as the finger passed across the opening. Sac contained omentum, colon, and small intestine. Omentum and colon adherent to the top of the sac. Impossible to reduce contents.

Herniotomy and Radical Cure.

Skin and protruding omentum sloughed away. Omentum excised. Sac ablated. Abdominal wall sutured in layers with silk	78	C.	Ovarian cyst removed 20 years previously.
Gut replaced, omentum excised. Recti widely separated; skin sutured with horsehair, and then tucked in with silkworm gut	16	C.	Omentum adherent to sac. Sac ablated.
Omentum excised, small gut replaced. Sac ablated. Abdominal wall sutured <i>en masse</i> with silkworm gut	19	C.	
Omentum excised, intestine replaced. Sac ablated with silk. Recti sutured with silkworm gut	1	D.	Intestines much congested. P.M.— Bowel in neighbourhood of umbilicus congested, but otherwise healthy; gall-bladder distended, and contained a calculus the size of a pigeon's egg; fatty heart and liver
Gut incised, contents evacuated and sewn up with Lembert sutures Gut replaced. Omentum excised Recti sutured with silkworm gut. Sac ablated	1	D.	Previous ovariotomy. Sac contained omentum, which was adherent to sac, caecum, and colon. Collapse immediately after operation. Saline infusion 3 pints. P.M.—Large intestine becoming gangrenous; left broad ligament adherent to abdominal scar; chronic nephritis; fatty heart
Adherent large intestine separated and replaced. Sac ablated. Abdominal wall sutured in layers	24	C.	Fourth time of strangulation. See above, Table a.
Omentum excised. Sac ablated. Abdominal wall suture in layers with silkworm gut	19	C.	

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Duration of strangulation.	Structure of hernia.
10	—	F.	46	—	10 years	2 days	Enteroe-piplocele
11	Nurse	F.	50	—	2 years	24 hours	Enteroe-piplocele
12	—	F.	48	—	14 years	1 day	Enteroe-piplocele
13	House-work	F.	45	—	5 years	4 hours	Epiplocele

c. Strangulated Irreducible.

14	House-work	F.	50	—	7 years	36 hours	Enteroceles
15	—	F.	49	—	4 years	4 days	Enteroceles
16	House-work	F.	41	--	2 months	36 hours	Enteroceles
17	Traveller	M.	57	—	10 years	24 hours,	Enteroceles

Treatment.	No. of days in hospital.	Result.	Remarks.
Omentum excised, intestine replaced. Sac ablated. Abdominal wall sutured in layers	23	C.	Sac contained omentum, large and small gut, which was slightly congested.
Omentum excised, small gut replaced. Sac ablated. Abdominal wall sutured in layers with silkworm gut	21	C.	Omentum adherent to sac. Fibroid of uterus.
Omentum excised, intestine replaced. Sac ablated. Silkworm gut sutures through abdominal wall	51	C.	Sac contained matted omentum and a loop of small intestine and colon.
Omentum excised. Sac ablated. Abdominal wall sutured in layers with silkworm gut	19	C.	

Herniotomy and Artificial Anus.

Small intestine, much discoloured, replaced; following day reopened and Paul's tube tied in	3	D.	Bowel much congested. Vomiting and abdominal pain 24 hours after operation. P.M.—Gut much discoloured in several places; slight local peritonitis.
Sac contained gangrenous colon, which gave way during manipulation. Paul's tube tied in. Small intestine much distended; this also brought outside the abdomen and a Paul's tube tied in	1	D.	Patient much collapsed. Death 6 hours after operation. P.M.—Hernial sac multilocular; signs of long-standing adhesions, with some recent peritonitis and fresh adhesions.
Sac contained ileum, cæcum, and appendix, which were gangrenous. These brought outside the abdomen and Paul's tube tied in ileum. Two days later 4 feet of gangrenous cæcum and ileum excised	6	D.	At first operation patient's condition bad; improved after operation. After second operation gradually got worse, and died on 6th day. P.M.—No peritonitis; right kidney large, but no morbid change; left a mere fibrous remnant, apparently from primary non-development; ureter not dilated.
Six inches of gangrenous small gut excised and Paul's tubes tied in	1	D.	P.M.—Gut gangrenous $2\frac{1}{2}$ feet from commencement of jejunum; peritoneum much matted and omentum adherent in all directions; no free fluid; cirrhosis of liver; gouty deposits in metatarso-phalangeal joints of great toes.

APPENDIX TO SPECIAL TABLE I.—

Initials.	Occupation	Age.	Sex.	Side.	Duration of hernia previous to 1st operation.	Nature of primary hernia.	Method of radical cure of primary hernia.	Course of healing of primary hernia.	Interval since primary rad. cure.
W. C.	Labourer	48	M.	R.	12 years	Reducible inguinal	Sac ligatured and ablated ; pillars sewn with kangaroo	Suppuration	1 year
J. G.	Cowman	32	M.	R.	1 month	Reducible inguinal	M. Banks's, with silk	Suppuration	4½ years
W. A.	Stationer	23	M.	L.	5 months	Reducible inguinal	Hastead's, with silk	First intention	17 months
P. M.	Fitter	41	M.	L.	15 years	Reducible inguinal	Kocher, ablation of sac ; canal closed with silk sutures	First intention	15 months
W. P.	Royal Engineer	28	M.	L.	6 days	Reducible inguinal	Sac ablated with silk ; canal : Macewen's stitch with kangaroo tendon	First intention	7 years
A. B.	Boot-maker	53	M.	R.	3 years	Reducible inguinal	Kocher, with silkworm gut	First intention	15 months
W. B.	Labourer	22	M.	R.	6 weeks	Reducible inguinal	Sac ablated ; canal : Macewen's stitch with kangaroo tendon	First intention	7 months
T. J.	Labourer	34	M.	L.	5 years	Reducible inguinal	Sac ablated with silk ; canal closed with silk	First intention	2½ years
T. H.	Labourer	31	M.	R.	4 months	Reducible inguinal	Sac ablated with silk ; deep silk sutures to canal, silver wire sutures to aponeurosis	First intention	17 months
C. D.	Metal polisher	15	M.	R.	3 weeks	Irreducible inguinal	M. Banks's, with silk	First intention	3½ years

Statement of Recurrent Hernia.

Nature of recurrent hernia.	Duration of recurrent hernia.	Method of radical cure of recurrent hernia.	Course of healing.	Remarks.
Reducible inguinal	15 months	Truss	—	At first operation cæcum and appendix found in the sac, which could only be partially ablated on account of the cæcum being adherent; pillars sutured with Kangaroo tendon.
Reducible inguinal	5 days	Kocher, with silk	Suppuration	
Reducible inguinal	2 months	Sac not found; pillars sutured with silk-worm gut	First intention	Recurrence on inner side of scar.
Reducible inguinal	7 months	Ablation of sac with silkworm gut; canal closed with silkworm gut	First intention	
Reducible inguinal	2½ years	Sac ablated with silk; canal: Macewen's stitch with kangaroo tendon	First intention	
Reducible inguinal	2 months	Kocher, with silkworm gut	First intention	
Reducible inguinal	2 months	Sac ablated with silk; canal sutured with silkworm gut	First intention	Second recurrence. Original radical cure 5½ years before admission. Macewen, with kangaroo tendon. Healing by first intention. Recurrence 4½ years later.
Reducible inguinal	20 months	Sac ablated with silkworm gut; canal closed with silkworm gut; veins of cord excised	Suppurated	Pyæmia. See Special Table III.
Reducible inguinal	1 month	Sac ablated with silkworm gut; canal closed with silkworm gut; sac contained appendix, which was excised	First intention	Hernia had escaped above old incision. Wire sutures holding. Second recurrence. Original operation 3½ years before admission, after hernia had been present for 3 years. M. Banks's suppuration.
Reducible inguinal	6 weeks	Sac ablated with silk; canal closed with silkworm gut	Suppuration	Second recurrence. Original operation 5 years before admission, after hernia had been present for 6 years. Sac ablated and pillars sutured with silk. First intention.

APPENDIX TO SPECIAL TABLE I.—

Initials.	Occupation.	Age.	Sex.	Side.	Duration of hernia previous to 1st operation.	Nature of primary hernia.	Method of radical cure of primary hernia.	Course of healing of primary hernia.	Interval since primary rad. cure.
E.E.B.	Shopman	36	M.	R.	4 years	Reducible inguinal	M. Banks, with silk; double varicocele excised	First intention	22 months
J. N.	Labourer	23	M.	L.	1 week	Reducible inguinal	Kocher, without suture of pillars	First intention	26 months
G. G.	Gardener	22	M.	R.	Cong.	Reducible inguinal	Kocher, with silkworm gut for sac and canal	First intention	7 months
A. B.	Fitter	41	M.	R.	?	Reducible inguinal	? Operation in Johannesburg	?	1 week
C. P.	Wood-carver	67	M.	L.	?	Reducible inguinal	? Operation at Metropolitan Hospital	?	4 years
E. H.	—	80	F.	R.	?	Strangulated femoral	?	?	12 years
A. S.	House-work	56	F.	—	1 day	Strangulated umbilical	Sheath of rectus sown; omentum ablated	First intention	2½ years
F. S.	Servant	50	F.	—	6 years	Reducible ventral	? Operation at Great Northern Hospital	?	4 years

Statement of Recurrent Hernia—continued.

Nature of recurrent hernia.	Duration of recurrent hernia.	Method of radical cure of recurrent hernia.	Course of healing.	Remarks.
Reducible inguinal	6 months	Sac ablated with silk; canal: Macewen's stitch with silkworm gut	First intention	Hydrocele of tunica vaginalis tapped.
Reducible inguinal	6 weeks	Kocher, with silkworm gut for sac and canal	First intention	
Reducible inguinal	1 month	Bassini's operation with silkworm gut	First intention	
Reducible inguinal	6 years	Bassini; sac ablated with silk; canal closed with silkworm gut	Suppuration	
Irreducible inguinal	2 years	Kocher; sac ablated with silk; canal closed with silkworm gut	First intention	Sac contained omentum, and gut very adherent.
Strangulated femoral	2 days	Herniotomy only	First intention	
Strangulated umbilical	2 days	Herniotomy only	First intention	Third time of strangulation. First occasion 3 years before admission, at which time she had had a hernia for 5 years. Omentum ablated and fascia sewn. Healing by first intention. Patient readmitted again this year, 6 weeks later, with hernia strangulated for fourth time. Abdominal wall sutured in layers.
Strangulated ventral	3 days	Omentum excised; sac ablated; abdominal wall sutured in layers	First intention	

SPECIAL TABLE II.—*Erysipelas*

No.	Sex.	Age.	Disease for which admitted.	Ward in which it arose.	Duration in hospital before attack.	Probable cause of attack.	Month.
1	F.	57	Mastoid abscess	Beatrice	8 days	Incision of abscess	December
2	M.	40	Axillary abscess	Clayton	6 days	Incision of abscess	December
3	F.	28	Lupus of face	Elizabeth	19 days	Scraping of lupus	April
4	M.	27	Ununited fracture of tibia and fibula	Edward	24 days	Tibia screwed	March
5	F.	14	Necrosis of tibia	Beatrice	34 days	Sinus of leg	October
6	M.	33	Rodent ulcer of cheek	Albert	9 days	Excision of ulcer	December
7	F.	28	Abscess of breast	Henry	10 days	Incision of abscess	October
8	M.	27	Chronic renal	George	35 days	?	October
9	M.	60	Stricture of urethra ; extravasation of urine	Leopold	2 days	Incision of abscess	May
10	F.	70	Cellulitis of leg ; abscess of thigh	Anne	16 days	? from without or from organisms within	July
11	F.	26	Tuberculous glands of axilla	Alexandra	28 days	Excision of glands	November
12	M.	24	Varicose veins	Albert	47 days	Suppurating incision of leg	September
13	F.	11 mos.	Mastoid abscess	Victoria	38 days	Wound over mastoid	July

(arising in Hospital).

Part where eruption appeared.	Interval between action of probable cause and appearance of eruption.	Duration of attack.	Result.	Remarks.
Neck	7 days	9 days	C.	Spread on to face.
Axilla	5 days	7 days	C.	Spread over chest. Cases 1 and 2 developed on the same day. Operations on different days.
Face	11 days	5 days	C.	Said to have had erysipelas four times previously.
Leg	4 days	7 days	C.	Spread up and down the leg.
Leg	?	4 days	C.	
Face	7 days	5 days	C.	
Breast	1 day	13 days	C.	Spread on to chest and back.
Abdomen	?	23 days	D.	P.M.—Chronic nephritis. Fluid in both pleuræ and in peritoneal cavity. General œdema.
Groin	3 days	4 days	D.	Erysipelas disappeared 8 days before death. P.M.—Cellulitis of groin and neighbourhood. Chronic interstitial nephritis. Hypertrophied heart.
Thigh	?	15 days	D.	Wound very dirty and suppurating profusely. Erysipelas spread on to back and abdomen.
Axilla	1 day	12 days	C.	
Leg	?	8 days	C.	See Special Table III.
Head	3 days	15 days	C.	Spread on to face.

SPECIAL TABLE III.—PYÆMIA, ETC.

CLASS 1.—*Admitted with the Disease.*

1. *Otitis media suppurativa; lateral sinus pyæmia.*—F. R—, male, æt. 21. Coachman. Four days before admission patient had had a polyp removed from the right ear; this had been followed by pain in the ear with slight discharge accompanied with headache. On admission no swelling or tenderness over the mastoid; swelling of right side of neck in the line of the vessels and much tenderness; pulse 132, temp. 100·2°. Second day swelling of neck less, but tenderness persisted; no obvious glandular swelling; follicular ulceration of fauces; temperature at night 103·2°, pulse 112. Third day temperature still ranging over 103°, pulse 100, respiration 44; no cough or expectoration, no pain in chest; frontal headache; nothing abnormal detected in discs; no local signs about mastoid; offensive discharge from ear. Jaundice noted in conjunctiva. A rigor at night, temperature rising to 106°, and fell slowly after sponging. Fourth day temperature 101°, pulse 112, respiration 49; icteric tint more marked; tenderness in line of vessels. Operation: incision in line of right carotid sheath; some enlarged glands removed; jugular vein found to be thrombosed, this separated from surrounding structures and divided; it contained breaking-down clot which was very offensive; vein traced down to the root of the neck, but the thrombosis extended further, so vein ligatured as low as possible and excised; mastoid antrum opened up, contained pus; lateral sinus exposed, on opening slight bleeding from upper end, but easily controlled by plug; upper end of jugular vein syringed out from lower end of sinus, and vein then stitched to skin for permanent drainage; a plug also put into mastoid wound. Same evening much oozing from wounds, which were re-dressed. Following morning patient's condition somewhat improved. In the afternoon sudden attack of dyspnea, suggestive of infarction, which passed off

after inhalation of oxygen. In the evening fresh attacks of dyspnoea, patient dying just before midnight. P.M.—Right lateral sinus thrombosed; a little offensive pus between the dura and bone; cancellous tissue of petrous bone infiltrated with pus. The jugular vein below the ligature was distended with soft post-mortem clot, which extended into the innominate. All the cavities of the heart distended with soft clot. Lungs oedematous; in the upper lobe of each was a small patch of consolidation the size of a pea, in the centre of which softening was taking place, this evidently being of embolic origin. Other organs normal.

2. *Otitis media suppurativa; lateral sinus pyæmia.*—A. H—, male, aet. 16. Discharge from left ear for 10 or 12 years. Eight days before admission suddenly attacked with headache, shivering, and vomiting. Five days later he became worse, with headache and marked tenderness and swelling behind the ear. On admission patient semi-conscious, taking no notice of his surroundings, and unable to answer questions, although at times doing what he was told. Redness and oedema over the left mastoid, with pain in the neck in the course of the vessels. Pupils normal. Left optic neuritis. No paralysis. Temp. $100\cdot2^{\circ}$, pulse 88, respiration 60; breathing stertorous. Operation: incision in the course of the jugular vein, which was brought to the surface and ligatured. Mastoid antrum opened and found to contain foul-smelling pus. Lateral sinus thrombosed; this was opened and the septic clot scraped away, the haemorrhage afterwards being checked by plugging. Jugular vein divided; not thrombosed. Wound in the neck sutured; mastoid wound partially closed and plugged. During night patient restless; temp. $103\cdot4^{\circ}$, pulse 104. Much pus on dressings in the morning. Gradually became weaker and died in the evening. P.M.—Left lateral sinus thrombosed as far as the torcular Herophili, the clot in places having broken down into an almost black offensive pus. Brain and meninges normal; at the anterior border of the left lateral lobe of the cerebellum was a small discoloured patch where the cerebellum had been in contact with the sinus. Both lungs contained a dozen small pyæmic abscesses, none of them larger than a Barcelona nut, and many smaller; some of them filled with black pus. Other viscera normal.

3. *Otitis media suppurativa; lateral sinus pyæmia.*—E. P—, female, aet. 10. Discharge from right ear for 2 years, which had stopped a fortnight before admission, when patient first began to get ill. Had first had a rigor 10 days before admission, followed by others. Delirious for 2 days; diarrhoea. On examination, a large, painful, fluctuating swelling over the right mastoid; marked tenderness in the right side of the neck over the jugular vein; temp. $99\cdot4^{\circ}$. Operation: right internal jugular vein exposed and opened, but found to be filled with a solid white clot, which extended to the root of the neck; vein excised as low as possible. Incision over mastoid; perforation of bone found, through which pus had escaped. Antrum opened; filled with stinking pus. Lateral sinus exposed, and found to be filled with clot, which was scraped out, and the sinus syringed out

through the jugular. End of jugular stitched to skin; sinus plugged. Second day temp. $102\cdot6^{\circ}$, pulse 160, respiration 40; patient delirious. Third day rigor; temperature rose to $104\cdot6^{\circ}$. No evidence of disease of lungs, pleura, or pericardium. No paralysis. Knee-jerks brisk and equal. Commencing optic neuritis. Pulse 150. Increasing feebleness. Death on 5th day. P.M.—Right internal jugular vein plugged with yellowish clot at the root of the neck. Lateral sinus plugged with putrid clot as far as the torcular; other sinuses healthy. A small vein from the roof of the tympanum contained breaking-down clot. Pneumothorax and collapse of lung on the left side. The fluid in this pleura was quite thick, almost puriform; a peripheral pyæmic abscess had burst on the surface of the lung. Infarcts of right lung on the point of breaking down. Visceera normal.

4. W. J. W—, male, æt. 6 weeks. Patient admitted with the stump of umbilical cord in a very sloughy condition, with cellulitis of abdominal wall. Temp. $104\cdot8^{\circ}$. Incisions. Abscesses developed on abdominal wall and in all the extremities, and were opened from time to time. Nightly rise of temperature, on one occasion reaching $106\cdot2^{\circ}$. Increasing rapidity of respiration and failure of strength. P.M.—Numerous small abscesses over trunk and extremities. Pus in anterior and superior mediastina. Confluent broncho-pneumonia of both lungs. Heart and pericardium normal. Joints unaffected.

5. A. S—, male, æt. 5 weeks. For a fortnight had diarrhoea and vomiting. Small abscesses noticed on legs and body, some of which broke 3 days before admission. On examination baby much wasted; numerous small abscesses all over abdomen and extremities; breathing rapid; temp. 101° . Death in a few hours. P.M.—Both lungs contained many small pyæmic abscesses the size of hemp-seeds, most numerous under the pleura; no tubercle. Half an ounce of pus in pericardium. Cloudy swelling of liver; no abscesses. Pyæmic abscesses of kidneys. Source of infection not discovered.

6. H. R. S—, male, æt. 5. Admitted with abscesses on chest and back, which had been noticed for 3 days. Temp. $101\cdot6^{\circ}$. Abscesses incised and syringed with perchloride. Five days later fresh abscess appeared, and was opened, on the front of the left thigh; it was found to be deep to the quadriceps. On 17th day fresh abscesses opened on the back of the right thigh, and on the upper and posterior part of the right humerus; temperature continued to rise at night, reaching at times 103° . Twenty-seventh day abscess on back of right thigh opened. After this patient steadily improved, and was discharged cured on the 57th day. The source of infection was thought to be a suppurating sore on the scalp. Pus examined bacteriologically; *Staphylococcus pyogenes aureus* only found.

SEPTICÆMIA—*admitted as such.*

1. *Cellulitis of leg; septic arthritis of knee.*—C. W—, male, æt. 20. A month before admission patient fell and grazed his leg. Treated himself with poultices. Admitted with extensive cellulitis of left leg, with abscesses on outer side and front of shin. Temp. 102°, pulse 130. Numerous incisions; pus found to extend to the interosseous membrane, but not through it. Temperature rose at night to 103°. On 5th day more incisions made; periosteum found to be stripped from tibia. Sixth day pus evacuated from popliteal space. Eighth day pus in knee-joint; joint opened, washed out, and sutured. Temperature higher, going above 104° each night. Patient weaker. Treated with antistreptococcus serum. Eleventh day fresh collection of pus in knee-joint. Twelfth day amputation of thigh in middle third. Infusion of saline, 2 pints. Death on following day. P.M.—Flaps in bad condition. Marrow in stump of femur inflamed and softening. No coagulation in artery or vein. Early stage of softening of all the internal organs.

2. *Necrosis of lower jaw.*—W. H. F—, male, æt. 40. Clerk. For many months had been troubled with his teeth. For 10 days had noticed swelling at the angle of the jaw on the left side. On examination a large fluctuating swelling of the face and neck, in the region of the angle of the jaw, on the left side; skin red and inflamed; swelling crackled on palpation. Temp. 99·4°. During night rigor; temp. 102·8°. Next day incision; the jaw at the angle and below the insertion of the masseter bare and rough; abscess cavity extended up into the temporal region and into the neck. Drainage. Fifth day temperature still rose to 102·2°. Hæmorrhage from the wound rather profuse; stopped by plugging. Sixth day abscess cavity extended nearly to the clavicle; fresh incisions made. Twelfth day no more hæmorrhage; temperature still high at night; much offensive discharge from mouth; no definite signs in lungs. Nineteenth day temperature higher than ever, on one occasion reaching 104·4°; normal in the morning. Twenty-sixth day fresh incisions made in chin and right side of neck; appetite very bad. Thirty-fifth day rigors, followed by others on the two succeeding days; antistreptococcus serum given for 18 days; no improvement; gradual loss of strength. Death on 68th day. No P.M.

CLASS 2.—*Acute Bone Cases.*

1. *Acute necrosis of tibia; endocarditis and pericarditis.*—F. G—, female, æt. $2\frac{9}{12}$ years. Ten days before admission had fallen and hurt her right leg, but did not complain about it until 7 days later, when it began to swell at the upper part. On admission marked swelling of leg from just above the knee down to the foot; very painful; skin hot and glazed. Temp. $103\cdot2^{\circ}$. Numerous incisions; much pus evacuated. Temperature at night $102\cdot2^{\circ}$; in the morning $100\cdot2^{\circ}$. Leg still much swollen; further incision made. Death during the night. P.M.—Periosteum completely stripped from the tibia. Pericardial cavity obliterated, the two layers of the serosa being stuck together by a tough layer of lymph, probably of long standing; a firm vegetation, the size of a split pea, attached to the endocardium of the left auricle, just above the base of the mitral; valves competent. Small pyæmic abscesses in kidney.

2. *Acute infective osteo-periostitis of femur; suppurative pericarditis.*—B. J—, male, æt. $5\frac{1}{2}$ years. Knocked down 2 days before admission, but no notice taken until the following day, when he complained of pain over the hip-joint and over the inner aspect of the thigh. During the night he was delirious. On admission tender swelling on the posterior surface of the upper part of the thigh. Temp. $102\cdot2^{\circ}$. Incision made into the swelling, and pus found beneath the periosteum, which was stripped for some distance off the bone. Drainage-tube inserted. Temperature still remained high, reaching 104° . Femur trephined and pus found in the centre of the bone. General condition rapidly became worse. Death on 3rd day. P.M.—Periosteum stripped from the femur everywhere except in front. On sawing through the femur, a little distance from the trephine hole, no change found in the bone or marrow. Lungs congested and œdematosus. Pericardium contained 2 ounces of turbid fluid; adherent lymph over the anterior surface of the heart and around the auricles; valves normal. Cloudy swelling of liver and kidneys.

3. *Infective periostitis of femur; pyæmia.*—F. D—, female, æt. 9. For a week child had had a sore on the right foot; 2 days before admission leg became swollen. On examination an abrasion on the dorsum of the right foot, and the leg was swollen up to the knee, the greatest swelling being over the internal malleolus; some tenderness on pressure; no fluctuation. Temp. $103\cdot2^{\circ}$. Second day definite fluctuation over internal malleolus; an incision made and pus evacuated; no bare bone in that position. Second incision made over the upper end of the tibia; pus found beneath the periosteum, and the shaft found bared over the inner and posterior aspect for the whole length. Child got rapidly worse, temperature reaching 105° . Wounds draining well. Death on 5th day. P.M.—Lungs studded with small superficial abscesses, especially just beneath the pleura. No pleural effusion. Pericarditis; abscesses in cardiac muscle. Numerous small abscesses in the pyramids of the kidneys. Brain healthy.

CLASS 3.—*Arising in Hospital.*

Reducible inguinal hernia, recurrent.—T. J.—, male, æt. 34. Labourer. Previous radical cure $3\frac{1}{2}$ years previously ; recurred $1\frac{1}{2}$ years later. Radical cure performed ; sac ligatured with silkworm gut, veins of cord excised, canal closed with silkworm-gut sutures. Wound healed by first intention. Slight enlargement of the testicle noticed on 12th day after operation. Rise of temperature to $102^{\circ}6$ on 19th day. 21st day abscess beneath the incision, scrotum red and œdematosus. Incision made into abscess, and much pus evacuated ; counter-opening in scrotum, and drainage-tube inserted. Temperature fell for a day, but gradually rose again, and on 26th day was 105° ; tepid sponging. 31st day abscess over the right shoulder opened ; on 37th day abscess over the axillary border of left scapula opened ; 41st day swelling of right elbow ; 42nd, swelling of left ankle ; 45th day, abscess in left calf incised ; antistreptococcus serum injected. 61st day fresh abscess opened on the upper part of the left arm ; patient on the whole better, though temperature still rose to 102° at night. Steady improvement up to the time of leaving hospital on the 98th day, though sinuses on left arm still discharging. Admitted 5 weeks later with fresh abscess in right arm, left leg, and scrotum, but without rise of temperature ; these were incised, and the patient sent to convalescent home after being 16 days in hospital.

Internal and external haemorrhoids.—H. C.—, male, æt. 22. Bricklayer. Patient had had haemorrhoids for 3 years. Whitehead's operation performed day after admission. Temperature rose to 102° the day after operation, but fell on the 2nd day to $99^{\circ}2$, and remained down till the 4th day, when it rose to $103^{\circ}6$. Bowels opened on the 3rd day ; discharge from penis ; appearance of wound fairly healthy. Eighth day dry pleurisy at the base of the right lung ; no rigors. Temp. $103^{\circ}8$. Some tenderness and induration in the middle of the right forearm. Albuminuria. Death on 10th day. P.M.—Localised inflammatory induration on the anterior aspect of the forearm, which was breaking down. Left lung universally adherent, and had to be cut out of the body ; right pleural sac contained a few adhesions only. Lungs bulky and œdematosus, and short of air ; no infarcts or distinct pneumonic patches. Pericardium contained a slight excess of turbid serum. Liver fatty. No local abscess or inflammation discovered about the rectum.

Varicose veins.—O. L.—, male, æt. 24. Labourer. Had suffered from varicose veins for 2 years. Five portions of saphenous veins of left leg and 3 of the right leg excised and ligatured with celluloid ; skin sutured with continuous horsehair. Temperature rose steadily immediately after operation, reaching $105^{\circ}2$ on the 5th day. Left leg found to be suppurating on 3rd day ; right leg healthy. Incisions made into left leg, as it was quite

cellulitic. 5th day temp. $105\cdot2^{\circ}$. 15 grains of quinine given, and later patient tepid sponged. Temperature fell, but rose again soon after to $104\cdot8^{\circ}$, with a rigor. 6th day internal saphenous vein opened up and found to be full of pus. Temperature fell on the following day to 99° , but afterwards continued to rise every night. 20th day, abscess formed beneath the trochanter, and was opened. From time to time abscesses formed on both legs, and were incised; wounds gradually cleaned up, but healed very slowly, with much granulations. Steady improvement till 48th day, when erysipelas started on the leg, and lasted 8 days. Sent to convalescent home cured on 61st day.

Fractured patella ; wiring.—F. W—, male, æt. 48. Porter. Admitted with fractured patella on the day after the accident. Patella wired 19 days afterwards; at the operation much clot found in the joint, which was scraped out, and the joint irrigated with 1 in 40 carbolic; silver wire used for suturing patella, and silkworm gut for the skin. Temperature rose on 2nd day to $101\cdot8^{\circ}$, and on the 3rd to $103\cdot8^{\circ}$. Wound dressed, and found to be suppurating; stiches removed and pus let out. On the following day a counter-incision made. Temperature still rose to 103° . On 9th day constant irrigation with boracic lotion and injections of antistreptococcus serum; 13th day no improvement in knee, much œdema of leg and ankle; anti-streptococcus serum discontinued. 17th day fresh incisions, chiefly above the joint; antistreptococcus serum again injected, constant irrigation stopped. 24th day patient drowsy and getting deaf; temperature still over 103° . 29th day pus extending down the calf; fresh incisions; patient not so well. 33rd day haemorrhage from the wound. 41st day amputation of thigh; death a few hours afterwards. P.M.—Lungs congested and œdematosus; endocardium blood-stained, valves healthy; abdominal viscera somewhat soft and fatty, but no marked disease.

Foreign body impacted in œsophagus ; œsophagotomy.—L. S—, female, æt. 38. Married. While sleeping swallowed a tooth-plate, to which were attached 3 teeth. Attempts made to extract it with forceps without success; œsophagotomy, and plate removed; œsophagus sutured with fine silk, skin with horsehair, a gauze drain being left at the lower part of the skin incision. Rise of temperature on 1st day to 101° , but it fell on the 2nd, and remained normal for 10 days. Rectal feeding, only water in small quantities being given by the mouth. Slight semi-purulent discharge on 4th day. On 8th day it was found that water taken by mouth escaped through the wound. 9th day foul discharge from the wound. 13th day sudden rise of temperature to 105° , with remissions; pulse 120; nothing found to account for temperature. 17th day jaundice; temperature at night $106\cdot6^{\circ}$; tepid sponging; antistreptococcus serum; rigors on the following day. 19th day broncho-pneumonia; still nightly rise of temperature. Death on 20th day. P.M.—A small opening in the œsophagus at the level of the cricoid cartilage; tissues around blackened and offensive. Each pleura contained about 8 ounces of turbid fluid. Lungs full of

broncho-pneumonic patches, which were breaking down; heart pale and flabby. Abdominal viscera showed usual septic changes.

A. B—, male, æt. 8. Admitted with congenital talipes equino-varus. Tarsectomy of right foot. Operation performed immediately after a pyonephrosis case; profuse suppuration; rigors and vomiting on the 18th day after operation; 2 days later more rigors, temperature rising to 106·6°; tenderness in the course of the femoral vein; diarrhea; common femoral vein tied and leg amputated below the knee on the 20th day. Rapid recovery. Discharged to convalescent home 44th day.

SPECIAL TABLE IV.—*Fractures and Dislocations treated*

BONE.	Sex.			Age.								
	Total	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Not stated
DISLOCATIONS.												
<i>Inferior maxilla—</i>												
Bilateral . . .	2	1	1	...	...	2	...	...	...	...	...	...
Unilateral . . .	1	...	1	...	...	...	...	...	...	...	1	...
<i>Humerus—</i>												
Subcoracoid . . .	52	28	24	...	...	2	7	8	11	13	10	1
Subglenoid . . .	5	2	3	...	...	...	...	...	...	1	4	...
Subclavicular . . .	2	1	1	...	...	...	1	1	...	...	...	...
Not stated . . .	4	3	1	...	...	...	1	2	...	...	1	...
<i>Radius and ulna</i> . . .	21	15	6	1	2	8	3	5	2	...	...	...
<i>Radius</i>	11	2	9	10	...	1	...	...	...	...	...	...
<i>Ulna</i>	1	...	1	...	...	1	...	...	...	...	...	...
<i>Metacarpus</i>	6	6	...	...	2	1	1	1	1	...	...	...
<i>Wrist</i>	2	2	...	...	...	2	...	...	...	...	...	...
<i>Digits of hand—</i>												
Proximal phalanx . . .	11	8	3	...	2	...	4	2	...	2	...	1
Middle phalanx . . .	2	1	1	...	...	...	1	1	...	...	...	...
Distal phalanx . . .	10	7	3	...	...	2	...	2	3	2	...	1
<i>Knee</i>	1	1	...	...	...	...	...	...	1	...	...	...
FRACtURES.												
<i>Nasal bones</i>	9	6	3	...	...	1	4	1	2	1	...	...
<i>Zygoma</i>	1	1	..	...	...	...	1	...	...	...	...	...
<i>Inferior maxilla</i> . . .	18	11	7	...	2	...	1	10	4	...	...	1
<i>Scapula</i>	8	8	...	...	...	...	1	2	2	3	...	...
<i>Clavicle</i>	111	78	33	31	29	14	9	9	8	7	3	1
<i>Humerus—</i>												
Shaft	41	25	16	5	6	7	4	2	4	5	7	1
Lower extremity . . .	19	15	4	1	7	9	...	...	...	...	2	...
<i>Separation of epiphysis</i> . . .	4	3	1	3	1	...	...	...	...	...	...	...

in Casualty Department, not admitted to Wards.

Side of body.			Remarks.
R.	L.	Not stated.	
...	
...	1	...	
25	27	...	Direct violence 12; indirect violence 9. Anæsthetic 10. Epilepsy 3. 4th time 1, many times 2.
2	3	...	Indirect violence 1. 3rd time 1.
1	1	...	
3	1	...	Direct violence 1. Many times 1.
12	9	...	Direct violence 3; indirect violence 8. Backwards 12; backwards and outwards 4; backwards and inwards 1; outwards 1; outwards with ulna backwards 1. Fracture of internal condyle 2. Anæsthetic 2.
7	4	...	Indirect violence 4. Subluxation 6.
...	1	...	Indirect violence; backwards.
4	2	...	Thumb 3, 3rd and 4th 1. Indirect violence 1.
...	2	...	Backwards 2.
7	4	...	Direct violence 2; indirect violence 3. Thumb 6; index finger 3; little finger 2. Backwards 5. Compound 3.
1	1	...	Ring finger 1; little finger 1.
6	4	...	Thumb 7; middle finger 1; little finger 2. Direct violence 4; indirect violence 1. Compound 2.
...	1	...	Outwards.
...	...	...	Compound 3.
1	...	...	In the centre.
5	9	4	Both sides 1; neck 1; angle 5; between molars 2; between canine and bicupid 2; body 3. Direct violence 10.
...	...	...	Direct violence 5; indirect violence 2. Acromion 4; supra-spinous fossa 2; infra-spinous fossa 1.
52	58	1	Outer third 33; middle third 12; inner third 4; intra-ligamentous 1. Comminuted 2. Greenstick 16. Direct violence 14; indirect violence 21.
24	17	...	Upper third 5; middle third 8; lower third 7. Surgical neck 13. Greenstick 1. Direct violence 13; indirect violence 10.
8	11	...	External condyle 4; internal condyle 13. T-shaped 2. Fracture of upper third of radius 1. Direct violence 4; indirect violence 3.
...	4	...	Upper 2; lower 2.

SPECIAL TABLE IV.—*Fractures and Dislocations treated in*

BONE.	Total	Sex.				Age.								Not stated
		M.	F.	-5	-10	-20	-30	-40	-50	-60	+60			
FRACTURES—continued.														
<i>Radius and ulna</i> . . .	90	63	27	16	26	37	3	1	...	3	3	1		
<i>Radius</i>	70	45	25	25	10	8	4	6	8	7	2	...		
Separation of epiphysis	7	5	2	1	3	3	...	...	...	...	...	...	...
Colles's	48	24	24	...	1	7	3	6	10	10	11	...		
<i>Ulna</i> —														
Shaft	16	9	7	4	1	1	4	2	3	...	1	...		
Separation of epiphysis	1	...	1	1	...	...	...	...	...	...	...	...	...
Olecranon	1	1	...	...	...	...	...	...	...	1	...	...	...
<i>Metacarpus</i>	32	26	6	1	1	4	10	8	6	...	2	...		
<i>Phalanges</i>	43	35	8	1	...	9	13	12	3	1	2	2	2	
<i>Ribs</i>	125	89	36	...	...	...	17	26	42	24	15	1		
<i>Tibia</i> —														
Shaft	24	21	3	6	6	3	1	1	2	4	...	1		
<i>Tibia and fibula</i> . . .	6	6	...	3	...	1	...	1	...	1	...	1	...	
Pott's	2	1	1	...	...	...	...	...	1	...	1	...	...
<i>Fibula</i>	42	39	3	2	3	3	5	12	9	6	2	...		
<i>Femur</i>	1	1	...	1	...	...	...	...	...	...	...	...	...
<i>Os calcis</i>	2	2	...	...	...	...	...	...	...	...	1	1	...	
<i>Metatarsal</i>	2	2	...	...	...	...	...	1	...	1	...	...
<i>Phalanges</i>	4	4	...	...	...	...	2	2	...	...	...	...

Casualty Department, not admitted to Wards—continued.

Side of body.			Remarks.
R.	L.	Not stated.	
54	34	2	Upper third 5; middle third 19; lower third 22. Indirect violence 18; direct violence 16. Greenstick 33. Fracture 2 months previously 1.
42	28	..	Upper third 9; middle 12; lower third 20; styloid process of ulna 1. Direct violence 19; indirect violence 16. Greenstick 22. Fracture 1 month previously 1.
3	4	..	Indirect violence 3; direct violence 1. Lower 3.
17	30	1	Direct violence 2; indirect violence 21. Double 2. Impacted 2.
5	11	..	Upper third 3; middle third 1; lower third 3; styloid process 1; coronoid process with backward dislocation 1. Direct violence 4; indirect violence 2. Greenstick 2.
1	..	..	Lower.
1	..	..	Direct violence.
15	17	..	Thumb 10; index 7; middle 4; ring 8; little 5. Compound 3; compound comminuted 1.
24	19	..	Thumb 9; index 7; middle 11; ring 7; little 9. Proximal phalanx 19; middle 14; distal 8. Compound 10.
60	63	2	2nd rib 3; 3rd 4; 4th 7; 5th 10; 6th 16; 7th 12; 8th 17; 9th 27; 10th 21; 11th 5; 12th 1.
14	8	2	Upper third 1; middle third 2; lower third 8. Internal malleolus 2. Direct violence 6; indirect violence 4.
3	3	..	Lower third 4. Not stated 2. Indirect violence 2.
2	..	..
22	20	..	Upper third 2; middle third 1; lower third 32. Comminuted 1. Indirect violence 14; direct violence 8.
..	1	..	Greenstick.
1	1	..	
..	2	..	2nd and 3rd 1; 5th 1.
2	2	..	Great toe 3; little toe 1. Proximal phalanx 3; middle 1.

R E P O R T
OF THE
IN-PATIENT DEPARTMENT FOR DISEASES
OF WOMEN
FOR THE YEAR 1899.

By JOHN S. FAIRBAIRN, M.A., M.B., B.C.H. OXON.,
OBSTETRIC REGISTRAR.

THE report for the year 1899 has been arranged in two parts as in preceding years. The first part consists of four tables, giving—

- (1) The number of patients admitted during the year, and the results of treatment.
- (2) A general classification of the diseases for which patients were admitted.
- (3) The number of operations during the year, and the results obtained.
- (4) The causes of death in the cases ending fatally.

The second part consists of five special tables, followed by abstracts of cases of interest. The special tables give a brief account of the more interesting cases of abdominal section; they do not, as in previous years, necessarily contain all the cases of abdominal section. They are arranged as follows:

- (1) Abdominal sections for diseases of the ovaries and broad ligament cysts.
- (2) Abdominal sections for diseases of Fallopian tubes (all cases).
- (3) Abdominal sections for cases of tubal gestation (all cases).
- (4) Abdominal hysterectomies (all cases).
- (5) Abdominal sections other than those included in the preceding tables.

In addition to the alteration involved in omitting from certain of the special tables those cases which do not appear to merit detailed notice, an extra table has been added by separating the cases of tubal gestation from the table of diseases of the Fallopian tubes.

TABLE I.

General Statement of Patients in Adelaide Ward.

Number of Beds in Ward (including small Ward)	...	...	...	29
Number of Patients in Ward, Jan. 1st, 1899	...	...	...	24
" " " Dec. 31st, 1899	...	...	...	25
" " discharged or who died in 1899 :				Rate per cent.
Cured	...	...	222	64·53
Relieved	...	...	60	17·44
Unrelieved or for other causes	...	...	39	11·34
Died	...	...	23	6·69
Total	...	...	341	100·00

Average number of days of each patient's stay in hospital—25·60.

TABLE II.—General

Disease.	Number of cases.		Age.			Duration of residence.			Result.				
	10-20	21-30	<40	>50	>60	Above 60	Under 1 wk.	1-2 weeks	2-4 weeks	1-2 months	Above 2 mos.	Cured.	Relieved.	Unrelieved.
I. DISEASES OF OVARY.													
A. <i>a.</i> Carcinoma	1		1							1			1
b. Sarcoma	1	1					1						
B. <i>Cysts:</i>													
<i>a.</i> Simple and multiple	22	2	6	3	5	5	1		4	14	4	22	
<i>b.</i> Sarcomatous	1		1				1						
<i>c.</i> Papillomatous	3	1	2							2	1	3	
<i>d.</i> Suppurating	4	1	2	1			1	1	1	1	2		1
<i>e.</i> Dermoid	4	1	1	1	1		1	1	1	3	3		
II. DISEASES OF FALLOPIAN TUBE.													
A. Salpingitis	34	2	18	13	1		2	1	8	18	5	17	14
B. Pyosalpinx	5	3	2							5	5		
C. Tubo-ovarian abscess	1				1					1	1		
D. Haematosalpinx	1	1									1	1	
E. Tubal gestation	12	1	1	7	3					3	9	12	
III. DISEASES OF THE PELVIC PERITONEUM, CELLULAR TISSUE, &c.													
A. Pelvic peritonitis	7	3	2	2			1	2	2	2	5		
B. Pelvic cellulitis	6	2	4				1	2	3	3	3	3	

Table of Diseases.

Remarks.

Exploratory laparotomy. Removal found impossible. Ascites.

Tumour removed; death from shock 8 hours after operation.

Abdominal section was performed in all cases; in 6 cases double ovariectomy was done; in 4 cases the cyst was inflamed, in 2 the pedicle was twisted, and in 1 the cyst was so twisted on itself as to cause strangulation of a portion of the tumour.

Hæmorrhagic sarcomatous growths in wall of cyst; hæmorrhage into cyst. Died of shock a few hours after operation.

1 patient operated on twice previously for same condition.

3 cases treated by abdominal section; the remaining case was transferred to the Surgical side, as it was thought to be appendicitis. Parovarian cyst also enucleated in 1 case.

Abdominal section in all cases; in 1 both ovaries were affected, and were therefore removed; in 1 a small hæmatocoele was also present, and was removed at the same time. In the fatal case the cyst was the seat of a squamous-celled carcinoma, which had become adherent to bladder, omentum, and abdominal wall. The patient died a week after operation from intestinal obstruction due to matting of intestines.

In 18 cases both sides were affected; 22 out of the 34 were treated by abdominal section, with 2 deaths, one from peritonitis in a case of double purulent salpingitis with intra-peritoneal abscess, the other from intestinal obstruction due to adherent intestine. In the cases operated on purulent salpingitis was noted in 4 cases, cystic ovaries in 11, including 5 cases where the cysts were suppurating.

Laparotomy in all cases. Cystic ovary in 1, suppurating cyst of ovary 2.

Abdominal section; removal of tube. The appearance of the tube suggested tubal mole, but no chorionic villi or other evidence of pregnancy could be found in the clot or tube-wall.

Laparotomy in all cases. Pelvic hæmatocoele present in 11 cases, the exception being a case of ruptured tube, where immediate operation was done, and blood found free in the peritoneal cavity; 6 were cases of tubal abortion, 4 of tubal rupture, and 2 of tubal mole.

Laparotomy with separation of adhesions in 1; vaginal puncture with evacuation of serum and pus in 1. The death occurred during the administration of an anaesthetic preparatory to draining an intra-peritoneal abscess.

Puerperal origin in all. Abdominal section in 1 case, which was thought to be tubal, but abdomen closed when condition discovered; later abscess was opened above Poupart's ligament in left iliac region. In another case an abscess was opened in the supra-pubic portion of the anterior abdominal wall. The other cases cleared up without pus formation.

TABLE II—

Disease.	Number of cases.	Age.					Duration of residence.			Result.						
		10-20	20-30	30-40	40-50	50-60	Above 60	Under 1 wk	1-2 weeks	2-4 weeks	1-2 months	Above 2 mos.	Cured	Relieved	Unrelieved	Died
III. DISEASES OF THE PELVIC PERITONEUM, CELLULAR TISSUE, &c.—continued.																
C. Papillomatous disease of pelvic peritoneum	1			1			1							1		
D. Broad-ligament cyst	3			2	1			1		1	1	2		1		
IV. DISEASES OF UTERUS AND CERVIX.																
A. Adenomatous growth of endometrium	33		9	12	12			3	22	8		33				
B. Endometritis	6		2	2	1	1		1	5			4	2			
C. Fibro-myoma	25		2	8	11	3	1	4	3	5	10	3	13	3	4	5
D. Polyp, fibroid	6			1	4	1		2	3	1		6				
E. Polyp, mucous	5			1	2	1	1	1	3	1		5				
F. Carcinoma of cervix	13		4	2	4	3	4	2	1	6		7	1	5		
G. Carcinoma of body of uterus	8			3	2	3		4	1	1	2	3		1	4	
H. Sarcoma of body of uterus	1					1				1		1		1		
I. Retroversion	6		3	3					2	4		4	2			
J. Retroflexion	2			2					1	1		1	1			
K. Procidentia uteri	6		1	4	1				1	1	4		3	3		
L. Hypertrophy of cervix	1		1							1		1		1		
M. Laceration of cervix	3		1	1	1				2	1		2	1			
N. Metrorrhagia	4			3	1				4			2	2			
O. Leucorrhœa	1		1						1				1			
V. DISEASES OF VULVA, VAGINA, &c.																
A. Atresia vaginalis	2	1	1						2			2		2		
B. Vaginitis			1	1					1			1		1		

continued.

Remarks.

Ovarian cyst with intra-cystic papillomatous growths removed 10 months before.

Abdominal section in 2; the other case had been operated on 6 months previously, with incomplete removal of cyst; the portion left behind seemed to be undergoing enlargement; patient advised to delay further operation.

Dilatation and curetting in all; 4 cases were recurrent.

Chronic endometritis 3, decidual 1, climacteric 1, senile 1. Dilatation and curetting in all; iodine to interior of uterus in 1.

Abdominal hysterectomy in 15, myomectomy in 1, vaginal hysterectomy in 2; abdominal section in 1, but removal of tumour or ovaries found impossible; curetting in 1; in others operation not advised. In 1 the tumour had undergone extensive sarcomatous invasion, 2 were cystic and breaking down in the centre, 2 were in a state of incipient gangrene, 1 was completely calcified. The deaths all occurred in cases of abdominal hysterectomy, see Table IV and Special Table III.

In all cases polyp removed by cutting across pedicle with scissors.

Removed by torsion in 4; vaginal hysterectomy in 1, as case was complicated by pyometra and the condition of the interior of the uterus was thought to indicate malignant disease.

Vaginal hysterectomy in 7; growth cut away and base cauterised in 1; disease too far advanced for surgical interference in 5.

Panhysterectomy by combined vaginal and abdominal operation in 3, vaginal hysterectomy in 3, unfit for surgical treatment 2. Of fatal cases: 3 were operated on; 1 died owing to growth perforating wall of uterus, see Table IV.

Vaginal hysterectomy; soft lobulated growth on posterior wall of uterus.

Ventro-fixation in 4, replaced and Hodge pessary in 2; mucous polyp also removed in 1, uterine adenomata in 1.

Ventro-fixation 1, replacement and Hodge pessary 1.

Ventro-fixation and anterior colporrhaphy 1, ventro-fixation and amputation of cervix 1, colpo-perinæorrhaphy 2, amputation of cervix 1, ring pessary 1.

Congenital. Amputation of cervix.

Erosion in 2. Amputation of cervix 1, Emmet's operation 1, curetting 1.

Dilatation and exploration of uterus in all; no lesion found.

Imperforate hymen incised in both cases, and followed by glass dilator. In 1 case the distended vagina formed a tumour extending to above umbilicus, 31 oz. of retained menstrual fluid escaped; in the other case the vagina contained 3 pints.

TABLE II—

Disease.	Number of cases	Age.					Duration of residence.	Result.			Cured.	Relieved.	Unrelieved.	Died.
		10-20	20-30	30-40	40-50	Above 60		Under 1 wk.	1-2 weeks	2-4 weeks	1-2 months			
V. DISEASES OF VULVA, VAGINA, &c. — continued.														
C. Suppurating vulvo-vaginal gland	2			1	1		1	1	1	1	1	2		
D. Lacerations of vagina or vulva	3				1	2	2	1				3		
E. Vaginal calculus		1			1					1		1		
F. Carcinoma of anterior vaginal wall	1				1				1					1
G. Epithelioma of vulva		1					1		1		1	1		
H. Carcinoma of vulvo-vaginal gland	1				1				1		1	1		
I. Hæmatoma of vulva		1		1						1		1		
J. Tumour of labium minus		1		1							1	1		
K. Recto-vaginal fistula		1		1						1		1		
L. Prolapse of vaginal walls		7	1	2	1	2	1	1	1	4	1	5	2	
M. Urethral caruncle		5		2	1	2		2	3			5		
N. Ruptured perinæum		10	3	4	3				2	8		10		
O. Old repaired perinæum		1		1			1						1	
VI. PREGNANCY AND ITS ACCIDENTS.														
A. Pregnancy	3			2	1		2	1				3		
B. Hæmorrhage during pregnancy	6	3	3				2	2	2		6			
C. Chorea of pregnancy	1		1								1	1		
D. Pyrexia after confinement	1			1				1				1		
E. Puerperal septicæmia	2		2			1		1		1		2		
F. Retained products of conception	21	8	8	5			1	10	9	1	20	1		
VII. DISORDERS OF MENSTRUATION.														
A. Amenorrhœa	1		1						1			1		
B. Dysmenorrhœa	10	8	2				1	1	8		10			
C. Menorrhagia		3	1	2				2	1			1	2	

continued.

Remarks.

Dissected out 1, incision 1.

Traumatic.

Large calculus formed in vagina after kolpokleisis for vesico-vaginal fistula; union broken down and calculus removed.

Removal of growth; molar pregnancy, evacuation of uterus on day following removal of growth; pyæmia, death.

Excision of growth.

Spheroidal-celled carcinoma; removal of growth and enlarged inguinal glands.

Traumatic; incised.

Inflammatory.

Bridge of tissue divided, perinæorrhaphy.

Colporrhaphy 2, colporrhaphy and perinæorrhaphy 3, ring pessary 1.

Excision and cautery in all; recurrent in 2.

Perinæorrhaphy in all.

Nothing found wrong; patient complained of incomplete control of sphincter.

1 sent up as ovarian, 1 as ectopic gestation, 1 for fibroids complicating pregnancy.

Induction in 4, spontaneous abortion in 1, rest and sedatives in 1.

Rest and isolation; labour at full term; choreic movements gradually ceased after labour.

7 weeks after labour.

Death day after admission in 1. In the other antistreptococcic serum, 12 injections of 10 c.c. without result.

Curetting 12, evacuation of uterus 7, haemorrhage ceased in hospital 1, refused treatment 1. Placental polyp in 2, cellulitic abscess opened in abdominal wall above pubes in 1.

Atresia of os internum, haematometra (1 oz.); dilatation and glass stem.

Dilatation of cervical canal followed by glass stem in all. Curetting also in 1.

Curetting, nothing found, in 2; refused treatment 1.

TABLE II—

Disease.	Number of cases.	Age.					Duration of residence.			Result.				
		10-20	30	40	50	Above 60	Under 1 wk.	1-2 weeks	2-4 weeks	1-2 months	Above 2 mos.	Cured.	Relieved.	Unrelieved.	Died.
VIII. VARIOUS.														
A. Dyspareunia	2	1	1	—	—	—	1	1	—	—	—	1	1	—
B. Pelvic neuralgia	3	3	—	—	—	—	1	2	—	—	—	3	—	—
C. Appendicitis	2	1	1	—	—	—	—	—	—	1	1	1	—	1
D. Perforation of small intestine	1	1	—	—	—	—	1	—	—	—	—	—	—	1
E. Malignant disease of large intestine	2	1	—	—	1	—	1	1	1	—	—	1	1	—
F. Malignant disease involving peritoneum	2	—	1	—	—	—	1	1	—	—	1	—	2	—
G. Tuberculous peritonitis	2	2	—	—	—	—	—	1	—	1	—	—	2	—
H. Chronic peritonitis	1	—	1	—	—	—	—	—	—	1	—	—	—	1
I. Ascites	2	—	1	1	—	2	—	—	—	—	—	—	2	—
J. Malignant disease in pelvis	1	—	1	—	—	—	—	—	—	1	—	—	1	—
K. Ventral hernia	2	—	—	2	—	—	—	1	—	1	—	1	—	1
L. Stricture of rectum	1	—	1	—	—	—	—	1	—	—	—	—	—	1
M. Hydronephrosis	1	—	1	—	—	—	—	—	—	1	—	1	—	—
N. Pyonephrosis	1	—	1	—	—	—	—	1	—	—	—	—	1	—
O. Sinus in abdominal wall	1	—	1	—	—	—	—	—	—	1	—	1	—	1
P. Fistula <i>in perineo</i>	1	—	1	—	—	—	—	—	—	1	—	—	—	1
Q. Femoral thrombosis	1	—	1	—	—	—	—	—	—	1	—	—	1	—
R. Gastral-gia	1	—	—	1	—	—	1	—	1	—	—	—	—	1
S. Retention of urine	1	—	—	1	—	1	—	—	1	—	—	—	1	—
T. Phantom tumour	1	—	—	1	—	1	—	—	1	—	—	—	—	1
U. Obesity	1	—	—	1	—	—	—	1	1	—	—	—	—	1
V. Abdominal enlargement	1	—	—	1	—	—	1	—	1	—	—	—	—	1
W. Enteric fever	1	—	—	1	—	1	—	—	1	—	—	—	—	1

continued.

Remarks.

Tag of inflamed hymen excised 1; moveable kidney 1.

Laparotomy and drainage of intra-peritoneal pelvic abscess in both. Subdiaphragmatic abscess in fatal case.

Transferred to Surgical side.

Rectum 1, sigmoid 1.

Abdominal exploration 1; unfit for surgical treatment 1.

Laparotomy, encysted fluid in pelvis, 1; transferred to Medical side 1.

Intestinal obstruction; intestines adherent into a solid mass; apparently originated in disease of Fallopian tube.

Cirrhosis of liver 1. Both transferred to Medical side.

Recurrent carcinoma after vaginal hysterectomy for carcinoma cervicis.

After operation for suppurating ovarian cyst 1, for suppurative salpingitis 1. Radical cure in both. Fatal: general suppurative peritonitis.

Syphilitic; oedematous and hyperplastic condylomata; made surgical O. P.

Laparotomy, removal; due to kink in ureter; thought to be a broad-ligament cyst.

Transferred to Surgical side.

Also sinus in posterior vaginal wall; laparotomy, mass of adhesions found in pelvis; sinus in abdominal wall closed during stay in hospital.

Scraped without result; transferred to Surgical side.

After abortion.

Functional; pregnancy.

Sent in as ovarian tumour.

Sent in as abdominal tumour.

Sent in as ovarian tumour.

Transferred to Medical side.

TABLE III.—*Operations*

Nature of operation.	Number of cases.	Cured.	Relieved.	Unrelieved.	Died.
Abdominal sections.—Total number	116	91	4	7	14
Cystic adenoma of ovary	22	22	...	...	...
Papillomatous cyst of ovary	3	3	...	...	...
Dermoid cyst of ovary	4	3	...	...	1
Suppurating cyst of ovary	3	2	...	...	1
Sarcomatous cyst of ovary	1	...	...	...	1
Sarcoma of ovary	1	...	...	...	1
Broad-ligament cyst	2	2	...	...	...
Salpingitis	22	17	3	...	2
Pyosalpinx	5	5	...	...	...
Tubo-ovarian abscess	1	1	...	...	...
Hæmatosalpinx	1	1	...	...	...
Tubal gestation	12	12	...	...	...
Hysterectomy for uterine fibroids	15	10	...	...	5
Myomectomy for uterine fibroid	1	1	...	...	...
Panhysterectomy for carcinoma of body	3	2	...	...	1
Ventro-fixation	7	7	...	...	...
Appendicitis	2	1	...	...	1
Hydronephrosis	1	1	...	...	...

performed during the year.

Remarks.

An increase of 29 on the numbers of last year.

Cysts of both ovaries removed in 3; second ovary removed to check growth of fibromyomata in uterus in 2; suppurating Fallopian tubes removed in 1; inflamed tube removed in 1.

Radical cure of ventral hernia also in 1.

Both ovaries affected in 1; tube and remains of haematocele of opposite side removed in 1. In the fatal case the cyst-wall was the seat of a squamous-celled carcinoma, which was adherent to and involved bladder, omentum, and abdominal wall. A portion of growth was also removed from bladder and omentum.

Cyst removed in 2, drainage in 1. Parovarian cyst also enucleated in 1.

Sarcomatous growths in cyst-wall; extensive haemorrhage into cyst. The patient became very collapsed on the evening before operation, and was then tapped, 6½ pints being drawn off. Died of shock a few hours after operation.

Death from shock 8 hours after operation.

Double in 1; cyst of one side removed, other cyst laid open and contents evacuated.

Both tubes removed in 7, in one of which fundus of uterus was also removed. Small suppurating ovarian cysts in 5; myomectomy also in 1, ventro-fixation in 1. Separation of adhesions only in 1. The fatal cases were due to general peritonitis (present before operation) and intestinal obstruction, see Table IV.

Tubes of both sides removed in 4 cases; double pyosalpinx in 2; suppurating cyst of ovary in 2.

Right appendages removed.

Probably due to tubal gestation.

In 2 cases the tumour had broken down in the centre, so forming a large fluctuating cystic swelling; in one of these the fluid was thick and creamy like pus; in 1 case the tumour had undergone extensive sarcomatous change, with patches of necrosis; in 2 cases incipient gangrene of the central part of the tumour was noticed. The causes of death in the fatal cases were peritonitis 2, shock 1, exhaustion 2.

Combined vaginal and abdominal operations. Fatal case died 9 days after operation from sapraemia and exhaustion; no peritonitis.

For retroversion in 4, of which 3 were adherent; for retroflexion with adhesions 1, for prolapse 2; of last 2 amputation of cervix also in 1, and anterior colporrhaphy in 1.

Abscess in pelvis opened and drained in both cases. In fatal case pus tracked up ascending colon to above right lobe of liver, where a considerable subdiaphragmatic abscess was present.

Thought to be a broad-ligament cyst.

Nature of operation.	Number of cases.	Cured.	Relieved.	Unrelieved.	Died.
Exploratory abdominal sections for—					
Malignant disease of ovary . . .	1	...	...	1	...
Pelvic peritonitis . . .	1	...	1	...	...
Tuberculous peritonitis with pseudo-pelvic tumour	1	...	...	1	...
Malignant disease involving peritoneum . . .	1	...	...	1	...
Sinus in abdominal wall . . .	1	...	...	1	...
Pelvic cellulitis . . .	1	...	...	1	...
Malignant disease of rectum . . .	1	...	...	1	...
Fibro-myomata of uterus . . .	1	...	...	1	...
Radical cure of ventral hernia . . .	2	1	...	...	1
Vaginal hysterectomy for—					
Carcinoma of body	3	1	...	...	2
Sarcoma of body	1	1	...	...	...
Carcinoma of cervix	7	7	...	...	...
Fibro-myoma	2	2	...	...	...
Adenomatous polyp	1	1	...	...	...
Amputation of cervix for—					
Prolapse of uterus	1	1	...	...	...
Hypertrophy	1	1	...	...	...
Laceration	1	1	...	...	...
Repair of cervix	1	1	...	...	...
Excision of malignant growth of cervix . . .	1	...	1	...	...
Fibroid polyp	6	6	...	...	...
Mucous polyp	4	4	...	...	...
Repair of ruptured perinæum	10	10	...	...	...
Colporrhaphy	7	7	...	...	...
Recto-vaginal fistula	1	1	...	...	...
Removal of vaginal calculus	1	1	...	...	...
Tumours of vulva and vagina	4	3	...	...	1
Hæmatokolpos	2	2	...	...	...
Pelvic abscess	4	3	1	...	...
Curetting of uterine cavity	57	54	3	...	...
Dilatation and exploration of uterine cavity for incomplete abortion	7	7	...	...	...
Induction of labour	4	4	...	...	...
Urethral caruncle	5	5	...	...	...
Excision of ulcerated patches of rectal mucous membrane	1	1	...	...	...
Total	247	214	9	7	17

Remarks.

Removal found impossible.

Separation of adhesions.

Encysted fluid in pelvis.

Ascites; cystic disease of ovary.

Supposed to be due to suppurating tube, but appendages found unaffected.

Thought to be tubal.

Removal of tumour or ovaries found impossible.

Fatal case: general peritonitis.

In fatal cases death in one probably from sapraemia; in other, 31 days after operation, from obstruction of bowel, rectum involved in growth, see Table IV.

Edematous submucous fibroid 1, calcified fibroid of cervix projecting into vagina 1.

Senile endometritis, pyometra. Examination of interior of uterus led to diagnosis of malignant disease.

Hypertrophic elongation of cervix.

Congenital.

Emmet's operation.

Growth cut away and surface treated with strong carbolic acid; not fit for radical treatment.

Pedicle cut through with scissors.

Torsion of pedicle.

Perinæorraphy also in 5.

Bridge of tissue divided and perinæorraphy.

Malignant 3, inflammatory 1. Death from pyæmia.

Incision of imperforate hymen.

Above Poupart's ligament 1, supra-pubic 2, posterior vaginal fornix 1.

Adenomata of endometrium 35, endometritis 6, menorrhagia 2, metrorrhagia 2, retained decidual remains 12.

Placental polyp in 2.

For haemorrhage during pregnancy.

Excision of growth and cauterisation of base.

TABLE IV.—*Causes of*

No.	Initials and date of admission.	Age.	Disease.	Operation.	Duration of residence.	Number of days after operation.
1	1898 A. T., Dec. 21	63	Carcinoma of body of uterus	Vaginal hysterectomy	Days. 60	31
2	J. B., Dec. 30	44	Carcinoma of body of uterus	Vaginal hysterectomy	8	3
3	1899 A. R., Jan. 7	44	Appendicitis; pelvic abscess	Laparotomy; drainage	24	12
4	A. L., Jan. 13	60	Carcinoma of body of uterus; pyometra	—	10	—
5	A. S., March 4	45	Carcinoma of body of uterus	Panhysterectomy; combined vaginal and abdominal operation	9	2
6	M. A., March 20	42	Ventral hernia	Radical cure	14	6
7	E. W., March 23	30	Double purulent salpingitis; intra-peritoneal abscess	Laparotomy; removal of both tubes and ovaries; drainage of abscess	6	2
8	H. B., May 10	69	Fibro-myomata of uterus undergoing sarcomatous degeneration	Abdominal hysterectomy	7	8 hours
9	H. S., May 13	66	Dermoid cyst of right ovary, epitheliomatous	Ovariotomy; removal of portion of bladder-wall and of omentum	19	6
10	E. C., June 27	34	Chronic peritonitis	—	39	—
11	A. B., June 14	36	Salpingitis	—	12	4
12	A. F., July 15	38	Sarcomatous ovarian cyst; ascites	Ovariotomy	4	10 hours

Death in fatal cases.

Cause of Death and Remarks.

Intestinal obstruction; secondary abdominal section; enterostomy. Death a few hours later. P.M.—Growth had spread into both lateral walls of pelvis; coats of rectum infiltrated, though mucous surface free; on the right it was spreading up round cæcum; secondary nodule in liver.

Exhaustion. P.M.—Limited gangrenous cellulitis in left broad ligament; old thrombosis of iliac and femoral veins on each side; malignant deposit in left adrenal; fatty heart, liver, and kidneys; œdema of lungs.

P.M.—Abscess cavity in pelvis thoroughly drained; appendix mainly sloughed *en masse*; no general peritonitis; pus tracked up along ascending colon to abscess containing 16 oz. of pus between right lobe of liver and diaphragm; also small collection of pus round head of right kidney; small perforation in right half of diaphragm, and about 10 oz. of pus in right pleural cavity.

P.M.—Slight general acute peritonitis; intra-peritoneal abscess into which opened sloughy perforation of uterus; interior of uterus full of sloughing growth; growth found microscopically to be carcinoma.

Septicæmia. P.M.—Wound satisfactory; no sign of suppuration or necrosis; no trace of peritonitis, even of the earliest, could be found; organs soft; old renal disease.

General peritonitis. P.M.—Loculated purulent and adhesive peritonitis; 1½ pints of turbid purulent fluid in abdomen; left basal pleurisy.

General peritonitis. P.M.—General peritonitis; abscess cavity in utero-vesical pouch, which had been drained; extensive suppuration in the connective tissue passing from left broad ligament along psoas as high as the first lumbar vertebra, and also round rectum, which was constricted.

Shock. P.M.—No haemorrhage; mitral incompetence; fatty degeneration of cardiac muscle; dilatation of pelvis and ureter of both kidneys, especially the right; slight interstitial change in both kidneys.

Intestinal obstruction. P.M.—The small intestine was much adherent coil to coil; five feet above the ileo-cæcal valve these adherent coils were entirely collapsed, and matted into a mass which lay on the pelvic brim above the bladder and uterus; the intestine above this collapsed part was full of fluid yellow faeces; bladder quite water-tight; no secondary malignant growths.

Intestinal obstruction. P.M.—Peritoneal cavity practically obliterated, intestines being rolled up into one mass, so that it was impossible to separate them; no signs of tubercle; adhesions densest in pelvis; right tube dilated.

Intestinal obstruction; secondary operation for this 3 days later. P.M.—Adhesion of small intestine to back of uterus causing obstruction; no peritonitis.

Exhaustion and hyperpyrexia; temperature rose to 107° before death. P.M.—About a pint of blood-stained ascitic fluid, containing masses of coagulated plasma, found free in the abdominal cavity; pedicle secure; old localised peritonitis; no recent peritonitis; no secondary growths anywhere.

No.	Initials and date of admission.	Age.	Disease.	Operation.	Duration of residence.	Number of days after operation.
13	S. P., July 19	54	Carcinoma of sigmoid flexure	—	Days. 5	—
14	E. M., July 24	41	Suppurating cyst of left ovary	Laparotomy; removal of cyst and tube; drainage	6	3
15	H. H., July 29	42	Intra-peritoneal pelvic abscess	—	1	—
16	A. W., Aug. 15	39	Fibro-myomata of uterus	Abdominal hysterectomy	4	3
17	M. B., Aug. 28	18	Sarcoma of ovary (breaking down in parts)	Laparotomy; removal of tumour and Fallopian tube	4	8 hours
18	M. B., Sept. 18	44	Fibro-myoma of uterus (undergoing extensive cystic degeneration)	Abdominal myomectomy	12	4
19	E. S., Sept. 25	45	Carcinoma of vaginal wall; uterine mole	Removal of growth; evacuation of uterus	8	5
20	A. V., Oct. 4	36	Puerperal septicæmia	—	54	—
21	E. H., Oct. 28	41	Fibro-myomata of uterus	Abdominal hysterectomy	17	5
22	J. W., Nov. 6	27	Fibro-myomata of uterus	Abdominal hysterectomy	12	2
23	S. S., Nov. 11	35	Puerperal septicæmia	—	1	—

Cause of Death and Remarks.

P.M.—Ascending, transverse, and descending colon greatly distended; no perforation or peritonitis; carcinomatous growth of the sigmoid, which had become adherent to jejunum and broad ligament and ovary; between sigmoid and jejunum was an abscess cavity formed by breaking-down growth, and this communicated with interior of sigmoid and of jejunum; the lumen of sigmoid was partially obliterated.
No P.M.

Died under anaesthetic (gas and ether). P.M.—Abscess in left iliac fossa rising out of pelvis, and presenting just above Poupart's ligament; this had arisen from left tube, which was enlarged, and opened into the abscess cavity; chronic tubal nephritis; soft, flabby, and dilated heart.

Broncho-pneumonia. P.M.—The lower lobe of each lung contained patches of confluent broncho-pneumonia, mostly about the size of peas, but a few were larger; heart flabby and pale; atheroma of mitral valve; no peritonitis; a few peritoneal adhesions in pelvis.
hock. No P.M.

Exhaustion. P.M.—No evidence of peritonitis; pelvis filled up by uterus and large mass of fibroids; liver large and exceedingly fatty; left pleural cavity obliterated by adhesions; right lung emphysematous; heart fatty, left ventricle hypertrophied.

haemorrhage. P.M.—Pus in pleural cavities and pericardium; purulent infarcts in lungs; no peritonitis; secondary growths in lungs.

No P.M.

General peritonitis. P.M.—Much fluid in peritoneal cavity, purulent in places; stump of uterus healthy; intestines glued together by inflammatory adhesions; early granular contracted kidneys.

Peritonitis. P.M.—Small quantity of blood-stained fluid in pelvic cavity; uterine stump healthy; intestines distended, lower coils adherent by a thin layer of rather tough lymph; no pus.

M.—No peritonitis; uterine cavity filled with dark offensive material; thrombosis and purulent infection of uterine sinuses; localised purulent cellulitis in right meso-netrium; pus in ovarian veins; incomplete consolidation of both lungs; yellow turbid fluid in both pleural cavities; parenchymatous degeneration of kidneys.

SPECIAL TABLE I.—*Abdominal Section for*

No.	Initials.	Residence.	Age.	Civil condition.	Date of operation.	Nature, &c., of tumour.	Adhesions.
1	M. T.	Bloomsbury	19	W.	1898 Nov. 3	Inflamed cystic adenoma left; double purulent salpingitis	Universal, firm
2	M. A.	St. Luke's, E.C.	45	W.	Nov. 4	Papillomatous cyst of right ovary; subperitoneal cyst; ventral hernia	Extensive and dense
3	E. C.	Steeple Aston, Oxfordshire	56	M.	Nov. 24	Cystic adenoma of right ovary; small fibro-myoma of left ovary	None
4	E. P.	Wimbledon	20	M.	Dec. 15	Cystic adenoma of right ovary	None
5	A. S.	Battersea	46	S.	1899 Jan. 5	Cystic adenoma of left ovary; twisted pedicle; subperitoneal fibroids	Slight
6	M. R.	Battersea	31	M.	Jan. 12	Dermoid cyst of right ovary; tubal abortion, left side	Slight
7	S. C.	Westminster	55	S.	Jan. 19	Unilocular cyst of left ovary	None
8	J. E.	Bermondsey	23	M.	Feb. 2	Dermoid cyst of right ovary	Bands to posterior abdominal wall
9	T. D.	Brixton	39	M.	Feb. 9	Inflamed cyst of right ovary; right salpingitis; left hydrosalpinx	Very extensive
10	C. L.	Englefield Green	44	S.	Feb. 25	Papillomatous cyst of right ovary	None
11	E. S.	Mortimer	27	S.	March 9	Unilocular cyst of ovary	None
12	F. H.	Walworth	54	M.	March 16	Dermoid cyst of both ovaries	None
13	F. B.	Brixton	38	S.	March 28	Cystic adenoma of right ovary	Slight to omentum

Ovarian or Broad-Ligament Tumours.

Condition and treatment of other ovary.	Drainage.	Peritoneum flushed.	Result.	Remarks.
Contained a small hæmorrhagic cyst; removed	No	No	R.	The cyst was a small multilocular one and intensely inflamed. The second ovary was removed because it was found impossible to remove the tube without including it.
—	No	No	R.	Papillomatous cyst of left ovary removed in 1891. Removal of cyst of right side then considered impossible. 12 pints of ascitic fluid removed. Convalescence interrupted by cellulitis, for which incision was made in right iliac fossa.
See "Nature of tumour"	No	No	R.	Double ovariotomy.
Healthy	No	No	R.	
Contained a dropscial corpus luteum; removed	No	No	R.	Second ovary removed to check the growth of fibroids. Convalescence delayed by cellulitis in left iliac fossa.
Healthy	No	No	R.	Cyst was mainly dermoid, but had also in one part a congeries of adenomatous cysts. The left tube with the remains of a hæmatocoele was also removed.
Healthy	No	No	R.	The cyst contained 16 pints.
Healthy	No	No	R.	
—	Yes	Yes	R.	The cyst was very adherent, and was torn during removal; it contained dark broken-down offensive material.
Slightly cystic	No	No	R.	There was severe shock after operation; 2 pints of normal saline were infused. Slight cellulitis during convalescence.
Not noted	No	No	R.	Contained over 21 pints.
See "Nature of tumour"	No	No	R.	The right cyst was small, about the size of a large walnut; it contained sebaceous material and hair.
Healthy	No	No	R.	Wound suppurated. Patient had irregular fever for a fortnight after operation; afterwards made good recovery.

No.	Initials.	Residence.	Age.	Civil condition.	Date of operation.	Nature, &c., of tumour.	Adhesions.
14	E. M.	Victoria Park	62	W.	1899 April 6	Cystic adenomata of both ovaries	—
15	F. V.	Dowlais	22	S.	April 20	Cystic adenomata of both ovaries	Extensive
16	E. L.	Spalding	36	S.	May 23	Cystic adenoma of right ovary; inflamed	Extensive
17	H. S.	Streatham	66	W.	May 25	Dermoid cyst of right ovary; carcinomatous change	To bladder, omentum, etc.
18	N. L.	Woking	30	S.	June 22	Unilocular cyst of left ovary	None
19	M. A.	Wands-worth	37	M.	June 24	Suppurating cyst of left ovary; pelvic peritonitis	Universal and dense
20	A. F.	Wands-worth	38	M.	July 19	Sarcomatous cyst of ovary; intra-cystic haemorrhage; ascites	Firm to abdominal wall
21	E. M.	Brixton Road	41	M.	July 27	Suppurating cyst of ovary	Extensive
22	M. M.	Brixton	38	M.	July 28	Suppurating cyst of left ovary; parovarian cyst, right side	Very firm and dense, especially posteriorly
23	M. H.	South Molton	28	M.	Aug. 22	Inflamed cyst of left ovary	Dense omental adhesions
24	M. A.	Snaresbrook	42	S.	Aug. 27	Cystic adenoma of left ovary; cystic right ovary	Considerable, to bladder and intestine
25	M. B.	West Norwood	18	S.	Aug. 31	Sarcoma of right ovary	Adhesions in pelvis
26	A. H.	Holbeach	44	M.	Oct. 5	Cystic adenoma of left ovary; twisted pedicle; intra-cystic haemorrhage	Slight to abdominal wall
27	J. F.	Hatcham	26	M.	Oct. 13	Cystic adenoma of left ovary	Some omental adhesions
28	M. W.	Herne Hill	53	M.	Nov. 2	Dermoid cyst of right ovary	Considerable, to omentum and abdominal wall

Condition and treatment of other ovary.	Drainage.	Peritoneum flushed.	Result.	Remarks.
See "Nature of tumour"	No	No	R.	
See "Nature of tumour"	No	Yes	R.	See "Special Abstracts."
Normal	No	Yes	R.	Chronic peritonitis.
—	No	No	D.	See "Special Abstracts,"
Normal	No	No	R.	The cyst contained intra-cystic growths.
Not noted	No	No	R.	Cyst shelled out of very dense adhesions.
Small cyst incised	No	Yes	D.	Patient became very ill on the evening before operation and was tapped, 6½ pints being drawn off. Died of shock a few hours after operation.
Not noted	Yes	Yes	D.	Cyst ruptured during separation of adhesions, with escape of much pus.
Not found	Yes, glass drainage-tube	No	R.	Ovarian cyst drained; parovarian cyst enucleated. Faecal fistula formed, which, however, gradually closed.
Healthy	No	No	R.	Small subperitoneal cyst enucleated.
See "Nature of tumour;" removed	No	No	R.	
Healthy	No	Yes	D.	Died of shock eight hours after operation.
Slightly enlarged	No	No	R.	Irregular temperature, rising to 103° and thereabouts, for 3 weeks after operation. Left femoral thrombosis and exudation into pouch of Douglas.
Not noted	No	Yes	R.	One portion of the cyst was rotated on the other, so that the torsion was sufficient to give rise to extensive haemorrhage into and inflammation of the twisted portion, and also to cause a small pelvic haematocoele.
Contained a small cyst, punctured	No	No	R.	The cyst was partly adenomatous, partly dermoid.

SPECIAL TABLE II.—*Abdominal Section*

No.	Initials.	Residence.	Age.	Civil condition.	Date of operation.	Nature of disease.	Nature of operation.
SALPINGITIS.							
1	E. M.	Bermondsey	28	M.	1898 Dec. 9	Chronic salpingitis; old haematocele, right side	Right appendages removed
2	S. W.	Old Kent Road	25	S.	1899 Feb. 2	Double chronic salpingitis; ovarian abscess, right	Removal of right appendages and left Fallopian tube
3	M. W.	Brixton	23	M.	Feb. 7	Left purulent salpingitis	Left Fallopian tube removed
4	I. Y.	Paignton, Devon	40	M.	Feb. 22	Chronic salpingitis and cystic ovary, right	Removal of right appendages
5	E. C.	Southwell	23	M.	Feb. 23	Double salpingo-oophoritis	Appendages of both sides and fundus of uterus removed
6	M. A. W.	Wandsworth	26	M.	Feb. 24	Double salpingitis: right chronic, left acute	Removal of appendages of right side and Fallopian tube of left
7	H. H.	Lambeth	36	M.	March 23	Left salpingitis; suppurating cyst of ovary	Left appendages removed
8	K. T.	Borough	35	M.	March 24	Left chronic salpingitis and cystic ovary	Removal of left appendages
9	E. W.	Streatham	30	M.	March 27	Double purulent salpingitis	Removal of both appendages
10	M. P.	Tufnell Park	36	M.	April 11	Left salpingitis; small inflamed ovarian cyst, with intra-peritoneal abscess	Left tube and portion of inflamed cyst wall
11	E. B.	Lambeth	21	M.	April 20	Right salpingitis and cystic ovary	Right appendages removed
12	F. K.	Lambeth	22	M.	April 20	Left salpingitis	Left appendages removed
13	E. H.	Walworth	40	M.	April 26	Double salpingitis; cystic ovaries	Both appendages removed
14	A. B.	Tooting	36	M.	June 22	Left salpingitis	Left tube and ovary removed

for Diseases of the Fallopian Tubes.

Drainage.	Perito- neum flushed.	Result.	Remarks.
No	No	R.	The haematocele seemed to be due to blood effused from the congested mucous membrane of the tube.
No	No	R.	
No	No	R.	There was also a small abscess in the left cornu of the uterus, due to perforation by a cane used for procuring abortion.
No	No	R.	Amputation of a hypertrophic cervix had been done a fortnight before. Ventro-fixation was done at same time as removal of appendages.
No	Yes	R.	The right side was purulent.
No	No	R.	
No	No	R.	The cyst was small, about the size of a walnut when collapsed.
No	Yes	R.	Excellent recovery.
Yes, gauze plug	Yes	D.	Large intra-peritoneal abscess communicating with the left tube.
Rubber tube	Yes	R.	Pus continued to discharge from sinus in abdominal wall up to time of patient's discharge from hospital; temperature also continued to fluctuate between 101° and 99°.
No	No	R.	Excellent recovery.
No	No	R.	Excellent recovery.
No	Yes	R.	
No	No	D.	Dense mass of matted intestine found in pouch of Douglas; this later caused obstruction, for which a second laparotomy was done without relief. Death 4 days after first operation.

No.	Initials.	Residence.	Age.	Civil condition.	Date of operation.	Nature of disease.	Nature of operation.
15	K. G.	Clapham	24	M.	1899 Aug. 5	Right salpingitis; suppurating cyst of right ovary; intra-ligamentous cyst, left side	Removal of right appendages; enucleation of cyst in broad ligament
16	A. G.	Stoke Newington	30	M.	Aug. 10	Double salpingitis	Removal of appendages of both sides
17	A. N.	Lavender Hill	24	M.	Aug. 24	Right salpingitis and suppurating cyst of ovary	Right tube and ovary removed
18	E. G.	Oxford St.	31	M.	Sept. 21	Double salpingitis	Separation of adhesions
19	M. S.	Wands-worth	32	M.	Oct. 13	Right salpingitis and cystic ovary	Right appendages removed
20	F. T.	Wimbledon	25	M.	Oct. 18	Left salpingitis and suppurating cyst of ovary	Left appendages removed
21	K. C.	Brixton	30	M.	Oct. 18	Double salpingitis; intra-peritoneal abscess	Right tube and ovary and left tube removed
22	F. A.	Fulham	33	M.	Oct. 26	Double salpingitis; sub-peritoneal fibroids	Both tubes removed; myomectomy
PYOSALPINX AND TUBO-OVARIAN ABSCESS.							
23	B. T.	Camborne	28	M.	1898 Dec. 15	Right pyosalpinx; chronic inflammation and occlusion of left tube	Removal of both uterine appendages
24	G. K.	Holloway	41	M.	1899 Feb. 9	Tubo-ovarian abscess, right side	Removal of right appendages
25	M. R.	Tralee, co. Kerry	30	M.	March 2	Double pyosalpinx	Removal of both appendages
26	C. T.	Upper Tooting	28	M.	Aug. 1	Right pyosalpinx and cystic ovary; left chronic salpingitis	Appendages of right side and tube of left removed
27	M. N.	Croydon	25	M.	Aug. 17	Left pyosalpinx and suppurating cyst of ovary; right salpingitis	Removal of portion of suppurating cyst; drainage
28	S. T.	Bermoudsey	34	M.	Aug. 17	Left pyosalpinx and suppurating cyst of ovary; right salpingitis	Removal of appendages of both sides

Drainage.	Perito- neum flushed.	Result.	Remarks.
Gauze plug, then rubber tube	Yes	R.	The broad-ligament cyst had thin purulent contents; the left ovary was almost entirely converted into a cyst containing thick muco-pus.
No	No	R.	Gonorrhœal. Cellulitic abscess formed, and was opened a fortnight after the operation.
No	No	R.	Excellent recovery.
No	No	R.	Right tube incised, no pus found; incision then closed; left tube patent.
No	No	R.	Excellent recovery.
No	Yes	R.	There was also a cystic right ovary. The cyst wall of this side was cut away and the rest of the ovary left. Excellent recovery.
No	Yes	R.	Pus and inflammatory lymph in right Fallopian tube; lymph in left.
No	Yes	R.	Three subperitoneal fibroids enucleated, the largest about the size of a tangerine orange.
No	No	R.	Microscopic examination of affected portion of right ovary showed it to be tuberculous.
Rubber tube	Yes	R.	The right tube opened into the cyst by an aperture admitting the tip of the little finger; the cyst wall was soft and greenish-coloured in places, evidently becoming gangrenous.
No	Yes	R.	Convalescence somewhat protracted owing to an attack of post-operative cellulitis in right broad ligament.
No	Yes	R.	Excellent recovery.
Rubber tube	Yes	R.	The parts were so matted that it was found impossible to remove the Fallopian tubes. Patient made a good recovery.
Glass tube	Yes	R.	The left tube opened into the cyst, which was about the size of a tangerine orange.

SPECIAL TABLE III.—*Abdominal*

No.	Initials.	Residence.	Age.	Civil condition.	Date of operation.	Nature of disease.	Nature of operation.
1	S. T.	Walworth	30	M.	Feb. 16	Left tubal abortion; pelvic hæmatocele	Left tube and ovary with blood-clot and cyst wall removed
2	C. C.	Camberwell	32	M.	March 17	Right tubal abortion; pelvic hæmatocele	Right tube, blood-clot, and sac removed
3	A. S.	Bermondsey	22	M.	April 6	Left hæmatosalpinx	Left tube and ovary removed
4	J. S.	Wimbledon	30	M.	May 18	Left tubal gestation and pelvic hæmatocele	Left appendages, hæmatocele, and sac removed
5	M. S.	Dulwich	31	M.	June 23	Ruptured tubal gestation (right); pelvic hæmatocele	Right tube, blood-clot, and sac removed
6	A. C.	Maida Vale	36	M.	June 29	Tubal mole, left; pelvic hæmatocele	Left appendages, blood-clot, and sac removed
7	S. T.	Clapham	40	M.	July 13	Tubal mole, left; pelvic hæmatocele	Appendages of left side and hæmatocele removed
8	S. L.	Nunhead	40	M.	July 27	Left tubal abortion; pelvic hæmatocele	Portion of left tube with sac and blood-clot removed
9	L. W.	Bermondsey	24	M.	Aug. 26	Right tubal gestation; rupture; intra-peritoneal hæmorrhage	Right appendages removed
10	J. L.	S. Kensington	36	S.	Sept. 21	Left tubal abortion; pelvic hæmatocele	Left appendages removed with clot and sac
11	E. A.	Barnes	32	M.	Sept. 25	Tubal abortion, left; pelvic hæmatocele; septic infection of effused blood	Outer end of left tube with sac of hæmatocele removed; also right ovary, which was cystic
12	E. S.	Peckham	40	M.	Oct. 19	Tubal mole, right; pelvic hæmatocele	Removal of right appendages, clot, etc.
13	E. B.	Brixton	19	M.	Nov. 23	Ruptured tubal gestation, right; pelvic hæmatocele	Removal of right tube with clot, etc.

Section for Cases of Tubal Gestation.

Drain-age.	Perito-neum flushed.	Result.	Remarks.
No	Yes	R.	Chorionic villi found in clot. Patient was in ward in Sept., 1898, for right tubal gestation, when right tube was removed.
No	Yes	R.	No chorionic villi found. Patient made an excellent recovery.
No	No	R.	The history of case suggested tubal gestation, but no evidence in shape of foetal remains or chorionic villi could be found.
No	Yes	R.	Fœtus of about 3 months was found in sac outside tube. No evidence of placental tissue could be found microscopically in the clot. Excellent recovery.
No	Yes	R.	The tube was distended with clot to about size of a pigeon's egg, and had torn across nearly two thirds of its circumference; clot was protruding through the tear.
No	Yes	R.	The tube was distended with a mass of clot about size of a hen's egg. On section a cavity lined with amnion containing some blood-stained fluid. No trace of embryo was found.
No	Yes	R.	On cutting open the mole in the tube an amniotic cavity was found measuring $1\frac{1}{2} \times \frac{3}{4}$ in. No embryo found. The fimbriated end of the tube opened into the sac of the hæmatocoele.
No	Yes	R.	The distal portion of the tube was very much distended, and opened into the adventitious sac; a separate mass of clot removed during the operation, on being opened up, was found to contain a small amniotic cavity with a fœtus measuring 2 inches attached by the cord to its wall.
No	Yes	R.	The rupture in the tube involved whole thickness of tube and peritoneum; it measured 1 inch in length by $\frac{1}{2}$ inch. There was a large mass of clot made up of chorionic villi and an amniotic cavity, but no fœtus.
No	Yes	R.	No chorionic villi were found, or other evidences of gestation. History suggested tubal gestation.
No	Yes	R.	The blood from the hæmatocoele was very foetid. About a week after operation an effusion of altered blood in the pouch of Douglas was opened and drained <i>per vaginam</i> . After this patient did well.
No	Yes	R.	The tube had ruptured about $1\frac{1}{2}$ inches from fimbriated end; mole protruded through rupture; mole contained a small amniotic cavity with what was apparently part of the umbilical cord, but no fœtus was found; chorionic villi were found microscopically in the clot.
No	Yes	R.	There was a rupture in the tube measuring $\frac{7}{8} \times 1$ inch; clot protruding through this was adherent to edges of rupture; no chorionic villi found.

SPECIAL TABLE IV.—*Cases of*

No.	Initials.	Residence.	Age.	Civil condition.	Date of operation.	Nature of disease.
1	A. G.	Snaresbrook	39	S.	1899 Jan. 12	Soft interstitial fibro-myoma
2	E. W.	Marlow, Bucks	44	S.	Feb. 15	Interstitial and subperitoneal fibroids
3	M. P.	Alnwick	27	S.	March 3	Fibro-myoma of anterior wall; early necrotic change
4	C. McI.	Wigan	46	S.	April 8	Fibro-myomata; cystic degeneration
5	A. C.	Luton	37	S.	May 11	Fibro-myoma undergoing cystic degeneration and suppuration
6	H. B.	Rochester	69	W.	May 17	Sarcomatous change of fibro-myoma
7	J. S.	Camberwell Green	37	M.	June 28	Fibro-myomata; incipient gangrene, fatty and calcareous degeneration
8	A. W.	Balham	39	M.	Aug. 16	Fibro-myomata; œdematosus
9	M. B.	Stockwell	44	M.	Sept. 26	Fibro-myomata; cystic degeneration
10	E. J.	High Wycombe	55	M.	Oct. 7	Subperitoneal and intestinal fibro-myomata
11	A. L.	South Hornsey	36	M.	Oct. 12	Fibro-myoma of anterior wall; œdematosus
12	S. C.	Weybridge	50	S.	Oct. 20	Fibro-myoma, subperitoneal
13	F. G.	Little-hampton	45	S.	Oct. 20	Fibro-myoma, interstitial
14	E. M.	Southampton	41	M.	Nov. 9	Fibro-myoma; early gangrene
15	J. W.	Camden Town	27	S.	Nov. 16	Fibro-myoma, interstitial

Abdominal Hysterectomy.

Drain-age.	Perito-neum flushed.	Result.	Remarks.
No	No	R.	Mass removed measured $4 \times 4\frac{1}{2}$ inches. Excellent recovery.
No	No	R.	Excellent recovery.
No	No	R.	See "Special Abstracts."
No	No	R.	Mass weighed 7 lbs. Excellent recovery.
No	Yes	R.	Contained 4 pints of pus. See "Special Abstracts."
No	No	D.	Tumour weighed 14 lbs. Patient died from shock 6 hours after operation. See "Special Abstracts."
No	No	R.	See "Special Abstracts."
No	No	D.	The tumour on section was acutely inflamed, friable, and covered with haemorrhagic patches; oedema and softening in places. Patient died three days after operation from broncho-pneumonia.
No	No	D.	Tumour weighed 10 lbs. $12\frac{1}{2}$ oz., and contained 4 pints 7 oz. of dark broken-down fibroid wall mixed with blood. See "Special Abstracts."
No	No	R.	The largest of the fibroid tumours had undergone cystic degeneration. Patient made an excellent recovery.
No	No	R.	Tumour weighed 7 lbs. $4\frac{1}{2}$ oz. Double basal pneumonia after operation.
No	No	R.	A pelvic abscess formed after operation and discharged into the rectum.
No	No	R.	Excellent recovery.
No	No	D.	On section the large fibroid was of a livid hue, and had a slightly offensive odour; microscopically the nuclei did not stain, and the appearance of the sections suggested necrosis; no extravasation of blood. Patient died of general peritonitis 5 days after operation.
No	No	D.	One of the fibroids was calcareous in places. Death on second day from peritonitis.

SPECIAL TABLE V.—*Abdominal Sections other*

No.	Initials.	Residence.	Age.	Civil condition.	Date of operation.	Nature of disease.	Nature of operation.
1	E. W.	Walworth	49	M.	Jan. 4	Carcinoma of body of uterus	Pan hysterectomy by combined abdominal and vaginal method
2	A. G.	Southampton	38	M.	Jan. 5	Pelvic peritonitis	Laparotomy; separation of adhesions
3	A. R.	Lambeth	44	M.	Jan. 19	Appendicitis; pelvic abscess; subphrenic abscess	Laparotomy; drainage
4	L. K.	Guildford	35	S.	Feb. 16	Subperitoneal fibro-myomata of uterus	Myomectomy
5	E. R.	St. Leonards	34	M.	March 2	Sinuses after pelvic abscess	Laparotomy, exploratory
6	A. S.	Balham	45	S.	March 11	Carcinoma of body of uterus; fibro-myomata	Pan hysterectomy by combined abdominal and vaginal method
7	E. S.	Edmonton	28	M.	March 23	Malignant disease of rectum	Laparotomy, exploratory
8	M. K.	Battersea	32	M.	April 13	Appendicitis; pelvic abscess	Laparotomy; removal of appendix
9	J. L.	Southall	32	M.	May 22	Pelvic cellulitis and peritonitis	Laparotomy, exploratory
10	E. C.	Clapham	34	M.	May 26	Malignant disease of peritoneum; cystic disease of right ovary; ascites	Laparotomy, exploratory
11	A. F.	Portsmouth	18	S.	June 15	Tuberculous peritonitis; encysted fluid in pelvis	Laparotomy; separation of adhesions
12	L. G.	Lambeth	56	S.	Aug. 7	Carcinoma of body of uterus; fibro-myomata	Pan hysterectomy by combined abdominal and vaginal method
13	F. H.	Battersea	25	M.	Sept. 8	Hydronephrosis; kink in ureter	Laparotomy; removal of hydronephrotic kidney
14	A. H.	Marlborough	37	W.	Nov. 9	Fibro-myomata of uterus; sacculation of bladder	Laparotomy, exploratory

than those contained in the preceding Tables.

Drainage.	Perito-neum flushed.	Result.	Remarks.
Gauze through vagina	No	R.	Excellent recovery.
	No	R.	
Glass tube	No	D.	See "Table of fatal cases."
	No	R.	Excellent recovery.
	No	R.	Abdominal sinus closed up; sinus in vagina persisted.
Gauze through vagina	No	D.	Patient died of septicæmia. See "Table of fatal cases."
	No	R.	Malignant disease of upper part of rectum discovered.
Gauze plug	No	R.	Thought to be a case of tubal disease; abscess deep in pelvis. Microscopic examination of appendix showed foci of acute inflammation.
	No	R.	Separation of adhesions only at abdominal section; later abscess opened in left iliac fossa.
No	Yes	R.	Disease too advanced for further measures; 5½ pints of ascitic fluid escaped.
	Yes	R.	Turbid fluid encysted among adhesions in pelvis.
Gauze through vagina	Yes	R.	Excellent recovery.
	No	R.	Thought to be a broad ligament cyst. Excellent recovery.
	No	R.	It was found impossible to remove tumour; attempt to remove ovaries also failed; so operation was abandoned.

SPECIAL ABSTRACTS.

1. DOUBLE OVARIAN CYST; INTRA-CYSTIC HÆMORRHAGE; HÆMOPHILIA; OVARIOTOMY; RECOVERY.

F. V.—, æt. 22, admitted April 11th, 1899; discharged June 4th, 1899. Maternal grandfather suffered from epistaxis, and had severe hæmorrhage after amputation of wrist. An aunt suffered from menorrhagia.

Patient gave a history of excessive bleeding from slight injuries, as cut fingers, and such like; on one occasion a cut finger bled for over twelve hours. She was also subject to epistaxis coming on without apparent cause, for which the nostrils had been plugged on several occasions; one attack lasted off and on for a fortnight. Bruises appeared on the skin after very slight injuries. She had never had any teeth extracted, as her friends regarded her as a “bleeder,” and were afraid of the consequences.

Except for the first two periods menstruation was always excessive, lasting from 8 to 12 days, and clots were passed with the discharge. For this she had been attended by her doctor, and often had to keep to her bed on account of the great loss. Latterly she had been losing for two or three weeks at a time, and had suffered considerable pain during the periods. About 9 months before her admission she had noticed the swellings in the abdomen, her attention being first drawn to them by severe “stretching” pains in the sides. Since the tumours were discovered they had considerably increased in size; apart from this her general health had been good.

On admission she was anaemic, but otherwise healthy appearance. The abdomen was not much distended; in each iliac fossa were two rounded swellings rising out of the pelvis, and apparently connected by an ill-defined mass; the whole reached to a height of $4\frac{1}{4}$ inches above the symphysis pubis, and measured $9\frac{1}{2}$ inches from side to side. Fluctuation could be obtained in both the globular swellings, but no fluid thrill could be elicited from side to side. The percussion note over the whole mass was quite dull.

On vaginal examination the vaginal roof was found depressed on the left side by a cystic swelling, fixed, and filling up the whole of the left side of the pelvis, and of about the size of two fists. Towards the middle line and

behind this swelling a separate lobule of somewhat harder consistence could be felt. This swelling was separate from the swelling on the right, which did not depress the vaginal roof, and reached much higher in the abdomen. No part of the right swelling could be reached by the vagina. The cervix was directed to the right, down, and backwards, and was quite fixed; the cystic depression was to the left of it, and descended below the level of the os. The sound showed the uterine cavity to be of normal length, and that the uterus lay in front of the swelling to the right.

On April 21st double ovariotomy was performed. There was a good deal of bleeding from the skin incision, but all bleeding points were secured at once with silk ligatures. There seemed to be some delay in clotting. The right cyst was the larger, and presented at the wound; a trocar was introduced, but no fluid came away, so the puncture was closed with forceps, and attempts were made to get the cyst out of the abdominal wound. Some adhesions between it and the broad ligament were broken down, and during this process the cyst wall ruptured, and much of the contents escaped into the abdomen; they consisted for the most part of dark blood and clot. The pedicle was tied in sections and the cyst removed.

The cyst of the left ovary was also adherent, and during separation its wall ruptured, and part of its contents, which were similar to those of the other cyst, escaped. After removal of the second cyst the abdomen was cleared of clot and fluid by sponging, and then douched with sterilised water. In all 16 pints of fluid were collected from the two cysts. During closure of the abdominal wound the edges of the skin incision were noticed to present a bruised appearance. The patient was much collapsed after the operation, and showed extreme pallor. A hypodermic injection of strychnine (gr. $\frac{1}{4}$) and brandy and enemata of normal saline were administered before she left the table. Pulse immediately after operation was 160, and temperature 96.4°.

Parts removed.—Both cysts were multilocular, the larger being when collapsed about the size of a cocoa-nut. The larger cavities of both cysts were filled with altered blood, and their walls were stained with blood-pigment. Some of the smaller cysts contained a clear mucoid fluid, and others were filled with blood-clot like the large cysts. A portion of the ovary was attached to the cyst from the left side, and on section was found full of blood, and also to contain a small blood cyst.

On the evening after operation the patient was so collapsed that 3 pints of normal saline were infused with good result. Hypodermic injections of strychnine were given for several days, until she had quite recovered from the shock of the operation. Subsequent progress was slow, owing to the extreme anaemia; there was no bruising or bleeding about the infusion incision, but there were well-marked bruises on the back of the hand and arm from pressure during this operation.

For about 3 weeks patient had irregular rises of temperature, usually to about 100°, but reaching 102° on one or two occasions; a round tense swelling was felt in Douglas's pouch, and it was thought that there had been some haemorrhage into the peritoneal cavity after operation.

When she began to get up a diffuse purpuric eruption of a punctiform character was noticed, especially about the thighs and legs, but afterwards spreading on to the chest and arms. When she left the hospital she was still anaemic, and the purpuric eruption on the legs was so extensive as to give a general bluish-red appearance to the skin of the legs and thighs.

2. DERMOID CYST OF RIGHT OVARY; EPITHELIOMA IN WALL INVOLVING BLADDER, OMENTUM, ETC.; LAPAROTOMY; DEATH.

H. S.—, aet. 66, widow, admitted May 13th; died June 1st, 1899. Nothing in family or previous history. Patient was married 40 years ago, and had four children; menopause 9 years ago. She had noticed a lump in the lower part of the abdomen for six weeks or so, her attention being called to it by pain in the side on walking. She had no haemorrhage or discharge, and no trouble with the bowels or on micturition. Her appetite had been failing for some months, and she had lost flesh.

On examination of the abdomen a tumour of about the size of a cocoa-nut was found above the pubes in the middle line; it had a rounded upper border, well-defined lateral boundaries, and its surface felt rough and nodulated; it was tender on palpation, and extended to about 2 inches above the pubes; the percussion note over it was dull; there was slight shifting dulness in the flanks. No signs of disease discovered elsewhere; urine normal.

Per vaginam (under an anaesthetic).—The uterus was found to be of normal size and freely moveable; just above the pubes in the middle line was a slightly moveable, firm, lobulated swelling, about the size of a small fist, and more deeply a somewhat globular cystic swelling could be made out, which caused some bulging of the anterior vaginal wall. It lay chiefly on the right side, and rose to nearly within 2 inches of the umbilicus.

Operation (May 25th).—The abdomen was opened in the middle line. The part of the tumour above the left pubic ramus was found adherent to the abdominal wall over an area about $1\frac{1}{2}$ inches in diameter; the deeper parts of the tumour were free from adhesions except at one part; there was a little ascitic fluid present. The tumour was brought out of the abdomen, and the pedicle tied and divided; it was found to be of about the size of a cocoa-nut, and to consist of two distinct portions—a lower and larger rounded smooth portion, and a smaller upper portion, which was rough and friable and adherent to anterior abdominal wall, omentum, and bladder. The adherent portion of the growth was separated from the abdominal wall, from the omentum, and from the bladder wall, and the tumour removed; the affected portion of omentum was also ligatured and cut off. The bladder was now examined, and as its wall was found to be considerably infiltrated with growth over the affected area, and as no enlarged glands were found, it was decided to dissect off the affected portion; this was done without opening the bladder, as the mucous membrane and submucous

tissues were unaffected ; the cut edges of the bladder wall and peritoneum were then brought together with fine silk sutures. The portion removed measured $1\frac{1}{2} \times 2$ inches. The left ovary was found to be normal.

For the first 2 days after operation the patient's progress seemed to be favourable, but on the third day she vomited several times, and the abdomen was found to be somewhat distended. An enema, followed by an ounce of castor oil, acted well, but the sickness continued ; a catheter was required, as she was unable to pass her urine. For a day or so she seemed to improve, and was able to take her food well, but on the 6th and 7th nights she had attacks of faintness and collapse ; on the first occasion she rallied after stimulants, but on the second occasion she gradually sank, and died a week after operation.

Examination of parts removed.—The cystic portion of the tumour proved to be a dermoid cyst of the right ovary, and the solid and adherent part to be a malignant growth arising in the cyst wall. The whole measured $3 \times 2\frac{1}{2}$ inches. On opening the cyst it contained yellow, oily, sebaceous material, which solidified on cooling, and some hair. The malignant portion measured $1\frac{1}{2}$ inches in diameter, and was about $\frac{3}{4}$ inch thick ; its external surface was rough and friable ; on section it was hard and fibrous. The report of the microscopic examination from the Clinical Laboratory said "squamous-celled carcinoma arising from the wall of a dermoid cyst." A piece of the growth excised from the bladder wall was also examined, and the report returned was "squamous-celled carcinoma infiltrating wall of bladder." The specimen was mounted, and is preserved in the St. Thomas's Hospital museum. The post-mortem examination showed that death was due to obstruction of the small intestine by adhesions ; the small intestine was much adherent, coil to coil. Five feet above the ileo-caecal valve these coils were entirely collapsed and matted into a mass, which lay on the pelvic brim above the bladder and uterus ; the intestine above this collapsed part was full of fluid yellow faeces. No malignant disease was discovered in the belly, and no malignant deposit in the glands could be found. The urinary bladder was quite watertight. The pedicle was in good order. The liver was fatty, and there was some hypostatic congestion at both bases.

3. FIBRO-MYOMATA OF UTERUS; DEGENERATIVE CHANGES IN TUMOURS. (6 CASES.)

(1) FIBRO-MYOMATA UNDERGOING NECROTIC CHANGE; ABDOMINAL HYSTERECTOMY; SECONDARY ABDOMINAL SECTION; COLOTOMY AND ENTEROTOMY; RECOVERY.

M. P—, æt. 27, single, admitted February 15th ; discharged May 10th, 1899. Family history good ; she always had suffered from constipation, and 9 years ago had a more severe attack than usual, which was accompanied by pain in the left iliac fossa, and severe enough to lay her up for a week ; otherwise her previous health had always been good.

Catamenia were regular and always profuse, lasting 6 to 7 days.

Patient attributed her present illness to a chill caught at the latter part of a menstrual period, about 3 weeks before her admission to hospital. She was seized with pains in the hypogastrium and right iliac fossa, and shooting down the legs; these became severe enough to compel her to take to bed, and to call in her doctor, who gave her castor oil with good result. On the day following the doctor's visit (a fortnight before admission) she was unable to pass her water, and her medical man had to draw it off by catheter. After this an examination was made, and a tumour discovered in the hypogastric region, and it was on this account she had been admitted. Except for a slight flow which had come on shortly before admission, and a fortnight after her previous period, she had never noticed any menstrual irregularity. She left her bed for the first time during her illness to come to hospital.

When she was examined after her admission, a hard globular mass could be felt in the hypogastric region, rising up from above the pubes and extending to within $2\frac{1}{2}$ inches of the umbilicus. The tumour was well defined, almost immovable, and not tender on palpation; the surface was smooth and regular, and no extension into either iliac fossa could be made out. The abdomen was resonant all over except over the tumour in the hypogastric region, where the note was dull.

The urine contained a large trace of albumen; otherwise no further evidence of disease was discovered.

On vaginal examination the cervix uteri was found to point more downwards than normal; the solid tumour felt above the pubes was felt in front of the vaginal wall, which it depressed slightly; the tumour was not tender and gave no sense of fluctuation. The sound passed the normal distance and showed the uterine canal to lie to the extreme right of the mass and behind it. The mass could not be separated from the uterus, and gave the impression of being equal in size to a foetal head.

The albuminuria disappeared during patient's stay in hospital before the operation was performed.

On March 3rd abdominal hysterectomy was done; when the abdomen was opened a little ascitic fluid escaped; the tumour was found free from adhesions, and was brought out of the abdominal wound; the broad ligaments were ligatured, so as to leave the ovaries, which were healthy, and the uterine arteries on both sides secured by passing a threaded needle under them in their continuity. Anterior and posterior uterine flaps were then dissected up, and the tumour removed with the fundus of the uterus. The flaps were then brought together by Lembert's sutures and the abdomen closed.

The parts removed consisted of the fundus of the uterus with an interstitial fibroid growing from its anterior portion. The measurement between the Fallopian tubes was $4\frac{1}{4}$ inches; on the cut surface were seen the two cornua, with a line of mucous membrane between them, showing that only the upper part of the uterine cavity had been cut through; the probe passed into each cornu about $2\frac{1}{2}$ inches. When a section was made through the

mass it was found to consist of a soft fibro-myoma of a dark red colour—about the size of a Jaffa orange—and surrounded by a wall of uterine tissue $\frac{3}{4}$ inch in thickness, from which it was separated by a distinct dark line; the tumour had a distinctly fishy odour. The specimen is preserved in St. Thomas's Hospital museum (No. 2435D).

The patient suffered a good deal from shock after the operation, and was put on hypodermic injections of strychnine (gr. $\frac{1}{30}$); two days later distension of the abdomen became noticeable, so enemata were tried, but without much relief, flatus only being passed; castor oil and calomel failed to produce any action of the bowels, and sickness after taking anything by mouth commenced. Owing to exhaustion everything by mouth was now stopped, and feeding by rectum substituted. On the 4th day after the operation the vomiting and retching continued, and as the abdominal distension was increasing, it was decided to reopen the abdomen. On March 7th the abdomen was reopened through the former incision; several ounces (about 5 or 6) of blood-stained fluid and clot were removed from the pelvis, but no source of bleeding was discovered; the small intestine was slightly distended, the large intestine very much so throughout its entire length, and the intestinal walls appeared healthy except for slight injection; there was no lymph or exudation anywhere. Both small and large intestines were punctured in several places, and their contents (a little oily fluid faecal matter with much flatus) allowed to escape. About $\frac{5}{6}$ of castor oil was injected into the small intestine through one of these punctures. The punctures were then closed by Lembert's sutures, except in the case of the transverse colon, where the incision was brought into the abdominal wound, and the smallest size of colotomy tube inserted into the bowel in order to prevent the further accumulation of flatus. The patient was suffering considerably from collapse after these measures had been carried out, but soon rallied, and from this time onwards the bad symptoms disappeared; the vomiting and retching ceased, faecal matter discharged continuously through the colotomy tube, and the patient was soon able to take liquid nourishment by mouth. Two days after the operation a large stool was passed by the rectum, and on the following morning the colotomy tube was left out; daily evacuations of the bowels by the natural passage were obtained by the use of aperients, so that the faecal fistula gradually closed up. Except for some slight trouble from thrombosis of left femoral vein, patient's progress was now uneventful, and she was discharged cured after nearly 3 months' stay in hospital.

(2) FIBRO-MYOMATA SHOWING NECROTIC CHANGE WITH FATTY AND CALCAREOUS DEGENERATION; ABDOMINAL HYSTERECTOMY; RECOVERY.

J. S.—, æt. 37, married, admitted June 21st; discharged July 29th. Patient always had good health; had been married 18 years, and had one child and no miscarriages. For 8 years she had noticed that she had been getting stouter, and $3\frac{1}{2}$ years ago began to pass clots and to have pain at the

menstrual periods, and a few months later had a severe flooding, which necessitated her remaining in bed for several days. About a year later she went to Guy's Hospital on account of the abdominal swelling, and was then told that she had a tumour, and that it would probably get better at the time of the menopause. She attended the hospital for about 8 months, but continued to get stouter, and also to suffer from severe pains before each period. This continued up to 3 weeks before admission, when she had a more severe attack than she had ever had before, and for this her doctor was called in. On his advice she came up to the hospital, leaving her bed for the first time for 3 weeks in order to do so.

On examination of the abdomen a firm, smooth, and fairly even swelling could be felt, rising up out of the pelvis and extending to about a finger's breadth above the umbilicus; no fluctuation could be made out; the tumour was slightly moveable from side to side, and there was slight tenderness on deep palpation. The greatest girth was at the level of the umbilicus, and was $41\frac{1}{2}$ inches. The abdomen was resonant to percussion except over the tumour. Urine normal.

On vaginal examination the cervix was found much shortened, and high up posteriorly. The anterior vaginal wall was much depressed by a solid swelling, between which and the cervix there was but a very slight sulcus. The mass was continuous with the upper part of the cervix, and formed the under surface of the abdominal tumour. No part of the tumour could be felt behind the cervix, or in the lateral portions of the pelvis. The sound passed little beyond the normal length, and showed the uterine canal to lie to the left side. The body of the uterus could be differentiated from the mass bimanually; the bladder sound showed the bladder to lie mainly in front of the tumour. The tumour was made out to be all continuous, and to extend upwards to the level of the umbilicus, on the left to within a finger's breadth of the anterior superior spine, and on the right 3 inches from the middle line. On June 28th abdominal hysterectomy was done. The incision was kept well above the pubes in order to avoid the bladder, and measured about 3 inches in length; the tumour was then brought out of the abdominal wound, and appeared to be mainly formed by two large fibroids, one behind and one in front and lower down. The broad ligaments were secured on both sides and divided; as there was some haemorrhage from branches of the uterine artery on the left side, this was secured by passing a ligature behind it in the lower part of its course. Anterior and posterior flaps were now dissected up, and the tumours shelled out of their uterine bed; as there was some haemorrhage from the cut surfaces, the right uterine artery was secured in continuity, as had been done in the case of the left. The flaps were then trimmed and their peritoneal surfaces brought together by Lembert's sutures, and after sponging out the abdominal cavity the wound was closed.

The parts removed were made up of the uterus and fibroid tumours with the appendages of both sides. The cavity of the uterus measured $3\frac{1}{2}$ inches in length, and its mucous membrane appeared quite healthy. There were 2 fibroid tumours in the anterior wall and 2 in the posterior. The lower and

larger of the anterior tumours measured 3 inches \times 3 inches, and on section was seen to be undergoing fatty degeneration; it was of a greenish-yellow hue, and was much softer than is usual in a hard fibroid; the cut surface felt somewhat greasy, and it had a well-marked edge, which was quite gritty to the touch from the amount of calcareous deposit in it. The upper anterior one was much smaller, and on section showed the structure of the ordinary hard fibroid.

The tumour in the posterior wall measured $4\frac{1}{4} \times 3\frac{3}{4}$ inches, and on section showed the appearance of bruised muscular tissue. It had a thin layer of uterine tissue round it, and was soft, pulpy, and oedematous, and deeply blood-stained, so that it had a dark purplish-red colour; the extensive blood-staining of its tissues was considered to show that it was undergoing necrotic change, and this was later confirmed by microscopic examination. The patient made a very satisfactory recovery, and was discharged from the hospital a month after the operation.

(3) FIBRO-MYOMA OF UTERUS UNDERGOING SARCOMATOUS CHANGE; ABDOMINAL HYSTERECTOMY; DEATH.

H. B--, æt. 69, widow, admitted May 10th; died May 17th, 1899. Family history good; married at 24, had 4 children and 1 miscarriage; last child was born 27 years ago; menopause had occurred at the age of 50.

Present illness.—The patient had noticed an abdominal swelling for 8 or 9 years; it had caused some dragging pain, and for 2 years before admission had prevented her from stooping; for about 1 year she had found some "lumps" forming, but these had appeared so gradually that she was uncertain about their exact time of appearance. On examination the abdomen was found to be occupied by a large irregularly lobulated mass, for the most part of firm and hard consistence, but here and there softer and semi-fluctuating. The largest part was a bilobed swelling in the left lumbar and iliac regions; there was a smaller round part in the right iliac fossa, evidently closely connected with the other, as they could not be moved separately. A third portion could be made out above and to the right of the umbilicus, and extending from there towards the right flank. The various portions of tumour were thought to be closely connected, as an impulse given to one was transmitted to all. The abdominal wall moved freely over the swellings. Both flanks were resonant to percussion; the note over the tumours was dull, the dulness over the mass in the right hypochondriac region was continuous with the liver dulness, but between it and the main mass of the tumour below the umbilicus was a band of resonance running from the left hypochondriac region to the right flank.

The greatest girth of abdomen was at the level of the umbilicus, and was 40 inches.

There were well-marked signs of emphysema in the lungs; the heart-sounds were faint, but apparently normal. The arteries were tortuous and somewhat thickened; urine normal.

On vaginal examination a firm hard tumour could be felt above the vaginal roof on the right and in the middle line. The top of the posterior cul-de-sac could not be reached. The cervix uteri could not be felt.

Operation (May 17th).—When the abdominal cavity was opened the tumour was found free from adhesions in front, but bound down behind and below to the abdominal wall and to the ascending colon and small intestine. The firmer adhesions were divided between ligatures, the others being separated by the fingers. The right broad ligament was found expanded over the right side of the tumour, so it was detached and ligatured in portions. The left broad ligament was tied in a similar manner and adhesions separated; the bladder was adherent by its posterior wall to the front of the tumour, and was therefore separated, and afterwards flaps were cut from the lower part of the uterus, which was involved in the left lower part of the growth. The mass was then enucleated from the uterus, and the flaps stitched over the stump by means of Lembert's sutures. The abdominal cavity was sponged out and the wound closed, a small cyanide plug being left in as a drain.

During the later stages of the operation the patient's condition became very bad, so strychnine and brandy were injected hypodermically; and before she left the table 3 pints of saline solution were infused into the basilic vein. She only rallied very slightly after her return to bed; and in spite of stimulation, and a second injection of 2 pints of normal saline, she died about 6 hours after operation.

The mass removed measured 10 by 9 by $8\frac{1}{2}$ inches, and weighed 14 pounds. It was irregularly lobulated, being made up of three large masses and one smaller. The uterus was in front and below; its wall was thickened, and its cavity measured $4\frac{1}{2}$ inches. A portion of the stretched-out cervix was removed with the body of the uterus. The right Fallopian tube was lying on the right side of the uterus, attached to the mass by a mesosalpinx $\frac{1}{2}$ inch in length; the tube measured $5\frac{1}{2}$ inches. On section the upper tumours were seen to be composed of a loose-meshed tissue, filled with oedematous watery fluid, with here and there patches of haemorrhage. On section the large mass on the left was found to be composed of breaking down cheesy material, which was very sharply marked off from the surrounding tissue, and evidently necrosed owing to blocking of vessels. Microscopic examination of the soft tissue showed it to be a round-celled sarcoma. The specimen is in St. Thomas's Hospital Museum (No. 2441A).

Post-mortem.—No haemorrhage into abdominal cavity; fatty degeneration well marked in liver; pelvis and ureter of right kidney much dilated, evidently from obstruction of the right ureter by the uterine tumour. The kidney parenchyma was fibrous and disorganised, with prominent vessels and thickened walls; the left kidney was less altered than the right, but contained several small cysts; its pelvis was also dilated, but to a less extent than that of the right side. Hypostatic congestion and emphysema of lungs; cardiac muscle friable and fatty; cusps of mitral valve nodular, causing incompetence.

(4) CYSTIC DEGENERATION OF FIBRO-MYOMA OF UTERUS; SUPPURATION; ABDOMINAL HYSTERECTOMY; RECOVERY.

A. C.—, at. 37, single. She had noticed swelling of abdomen for 6 years, but had paid little attention to it. Nine weeks before admission she had an attack of shivering with headache, followed 2 days later by severe pain in the left side of the abdomen. The abdominal pain lasted 5 weeks, and then ceased quite suddenly. She had been confined to bed for the 9 weeks before admission, and during that time her appetite has been very bad, and she has lost a good deal of flesh. Menstruation has never been affected; the flow was always scanty, and had become more so for 2 or 3 years before her illness.

On admission she was a thin, pale woman, who looked ill, and complained of a swelling in the abdomen for 6 years, with pain and loss of flesh for 9 weeks. Her complexion was sallow, and there was considerable brown discolouration under the eyes. On examination the abdomen was found to be occupied by a tense elastic swelling, which gave a very distinct fluid thrill. Just above the pubes a smaller tumour of firmer consistence could be felt, separated from the larger tumour by a distinct depression. The greatest girth of the abdomen was $33\frac{1}{2}$ inches. Except a band about $1\frac{1}{2}$ inches wide below the costal margin and in the flanks, the percussion note was dull over the whole abdomen.

There was a slight trace of albumen in the urine.

Per vaginam no enlargement of the uterus was found. The sound passed directly to the left; the uterus was not moveable. Behind the uterus were some small round masses, which were thought to be subperitoneal fibroids. A small, hard, slightly moveable tumour—the size of a Tangerine orange—could be felt to the right of the cervix and behind, which slightly depressed the vaginal roof. Another smaller swelling—the size of a marble—could be felt to the left of this.

No part of the abdominal swelling projected into the vagina, nor, indeed, into the lower pelvis, but through the anterior vaginal wall the more solid part of the tumour could be felt resting on the vaginal wall. No fluctuation could be felt bimanually in the lowermost part of the tumour.

Operation (May 11th).—When the abdomen was opened a little ascitic fluid escaped; extensive adhesions between the tumour and the anterior abdominal wall were found, and were separated with the finger. The hand was then introduced, and further adhesions at the side of the tumour broken down. During this process the wall of the tumour was ruptured, and a large quantity of inoffensive pus mixed with blood escaped; the quantity collected measured 4 pints. The incision was then enlarged and the cyst brought outside the abdomen, and adhesions between it and omentum and bowel separated, and all bleeding points secured.

The tumour was found to be a cystic fibroid arising from the fundus uteri, so it was decided to perform abdominal hysterectomy. This was done after ligature of the ovarian and uterine arteries. The abdomen was then well

cleansed by douching with sterilised water at a temperature of 108° , and the wound closed.

As the patient suffered somewhat from collapse towards the end of the operation, a rectal injection of hot saline and brandy was administered.

The parts removed consisted of a large suppurating cystic fibroid, together with some small subperitoneal fibroids. The portion of uterine body removed was seen on the under surface of the larger mass; it contained about $\frac{3}{4}$ inch of the uterine canal; and on opening this the endometrium was seen to be quite healthy. The main mass grew from the anterior wall of the uterus, and was made up of a hard solid portion and a cystic portion. The hard portion formed the lower part of the tumour, and on section showed the ordinary structure of a hard fibro-myoma. The upper cystic part of the tumour was covered externally with tags of adhesions and portions of adherent omentum, and its wall had been torn in several places during removal. It contained a puriform fluid, with flakes of broken-down necrotic tissue, evidently formed by the breaking down of the substance of the tumour. No putrid smell was noticed. Its wall was formed by the peritoneal covering with the remains of the fibro-myomatous tissue, and was very variable in thickness. Here and there the wall was so thin as to be composed almost entirely of peritoneal covering, and elsewhere much of the original fibro-myomatous structure was left projecting irregularly into the central cavity. The weight of mass removed was about $3\frac{1}{2}$ pounds (*i.e.* without the fluid).

The patient's convalescence was interrupted by the formation of a large abscess containing about a pint of foetid pus, which presented at the lower part of the wound. About a week after the operation the temperature rose and became irregular, varying between 100° and $103\cdot5^{\circ}$ until the abscess was opened, when it at once dropped, and the patient made a rapid recovery.

(5) FIBRO-MYOMATA OF UTERUS; CYSTIC DEGENERATION; ABDOMINAL MYOMECTION; DEATH.

M. B—, *æt.* 44, married, admitted September 18th, 1899; died September 30th. Patient always had good health; catamenia had been quite regular till she was about 30 years of age, when the loss became excessive, but this had passed off after a few years, though since then the periods had always lasted for 6 days, instead of 3 or 4 as before. She had one child; the labour was easy.

Present illness.—She was first told by her doctor 8 years ago that she had a fibroid tumour of the uterus; apparently the doctor had been called in because she was suffering from abdominal pain. From that time up to 6 months before her admission she had noticed no swelling of abdomen, nor had she had any pain or other symptom to draw her attention to the presence of the growth. About 6 months before admission she had noticed that the abdomen had begun to enlarge, and that a swelling had appeared in the lower and left part of the abdomen. This increased rapidly in size, but at

first she had paid little attention to it, until she began to lose weight and appetite, and to be troubled with sickness. These symptoms, together with an increased frequency of micturition, had troubled her for a month or so, and had caused her to come up to the hospital for advice.

On admission she was very pale and emaciated, and looked ill. The abdomen was found to be occupied by a large tumour of uniform outline extending from the pubes to within $1\frac{1}{2}$ inches of the ensiform cartilage. The tumour was divided by a sulcus into two parts, a lower, hard, nodular, and freely moveable portion extending up to $2\frac{1}{2}$ inches above the pubes, and a larger upper portion above this sulcus, which was tense and fluctuating, and gave a well-marked fluid thrill. The percussion note was dull all over the tumour. The girth at the umbilicus was $35\frac{1}{4}$ inches. No other signs of disease were detected. Vaginal examination showed the vagina to be encroached on by a many-lobed solid growth pressing on the anterior vaginal wall, and depressing the right lateral fornix. The cervix was high up. The small mass in the supra-pubic region was evidently connected with this solid growth, and therefore uterine; the cystic portion was too fixed to ascertain whether it moved with the lower growth or not.

Operation (September 26th).—On opening the abdomen the tumour was found to be extensively adherent to the abdominal wall and omentum; after these adhesions had been separated the tumour was brought outside the abdomen, when it was found to be attached to the uterus by a pedicle; a ligature was therefore put round this to control haemorrhage while flaps were dissected up and the tumour removed. After this the bleeding points were secured and the flaps turned in over the raw surface of the pedicle, and secured by a continuous silk suture. One subperitoneal fibroid, measuring $2\frac{1}{2}$ inches \times $1\frac{1}{2}$ inches, was enucleated from the mass in the pelvis, but it was decided not to proceed any further, as the tumours had burrowed deeply and the patient's condition was serious. While the abdominal wound was being sewn up a saline injection with brandy was given *per rectum*, and later 3 pints of normal saline were given by intra-venous infusion. On examination of the tumour after removal it was found to weigh 10 lbs. $12\frac{1}{2}$ oz. The cut surface on its base measured 4 inches \times 5 inches, and no part of the uterus was seen in it; on cutting open the tumour 4 pints 7 oz. of dark blood-stained fluid escaped, and with it a considerable quantity of broken-down fibroid wall mixed with blood-clot. The tumour had thus been converted into a cyst-like cavity, with walls varying in thickness from 2 inches at the base to $\frac{1}{8}$ inch at its anterior part. The inner surface was rough and irregular and breaking down. The smaller subperitoneal fibroid presented on section the ordinary appearance of a hard fibroid.

The patient recovered from the shock of operation, but abdominal distension and vomiting came on and persisted, and she gradually sank and died on the evening of the 5th day after operation.

Post-mortem.—There was a little extravasation of blood near the attachment of the omentum, and the coils of bowel in the vicinity were discoloured and injected. There was no evidence of general peritonitis at all.

There was no intestinal obstruction, and the bowels were healthy, but possibly a little distended. A huge mass of fibroids sprang from the uterus and nearly filled the pelvis, but there did not appear to be much pressure on the rectum. On examining the tumour after removal, the cavity of the uterus, which was much elongated, ran up in the right side of the mass. The whole mass was formed of an aggregation of interstitial and subperitoneal fibro-myomata, the largest of which were the size of Tangerine oranges; on section they were seen to be undergoing softening in the centre.

The left pleural sac was largely obliterated by adhesions, and the lung consequently short of air; the right lung, on the contrary, was emphysematous, and covered the heart entirely. The left ventricle of the heart was slightly hypertrophied, owing to thickening and rigidity of the aortic valves. The heart was very fatty.

(6) FIBROID TUMOUR OF CERVIX UNDERGOING CALCAREOUS DEGENERATION, AND PRESENTING AT THE EXTERNAL OS; SLOUGHING OF CAPSULE; VAGINAL HYSTERECTOMY; RECOVERY.

(For details see 'Trans. Obst. Soc. London,' 1899, vol. xli, p. 372, and plate.)

REPORT OF
THE OBSTETRICAL DEPARTMENT
FOR 1899.

BY WALTER W. H. TATE, M.D., M.R.C.P.,
ASSISTANT OBSTETRIC PHYSICIAN TO THE HOSPITAL.

THE JUNIOR OBSTETRIC HOUSE PHYSICIANS FOR THE YEAR WERE MESSRS.
R. H. BELL, S. H. BELFRAGE, H. M. SCAPING, A. E. STEVENS, AND
H. H. R. CLARKE.

I AM indebted to Mr. A. Bevan for kindly preparing the statistics for this report.

The number of women attended in the maternity department from January 1st, 1899, to December 31st, 1899, was 2333. Out of this number 31 resulted in twin births. There were 58 cases of abortion.

The various presentations that occurred are shown in the following classified list :

		Among the single births.	Among the twin births.	Total.
Vertex	1819	39	1858	
Breech	49	13	62	
Superior extremities, including				
shoulder	7	1	8	
Inferior extremities	10	3	13	
Face	6	—	6	
Funis	6	—	6	
Not stated (including "born before arrival" cases)	347	6	353	
	2244	62	2306	
Abortions			58	
			2364	

FORCEPS were employed to complete delivery in 65 cases : on four occasions in cases of contracted pelvis, once for placenta prævia, three times for face presentations, once each for breech presentations and transverse presentations, once for a case of accidental hæmorrhage, and in the remaining 54 cases for protracted labour.

PLACENTA PRÆVIA.—Only four cases of placenta prævia were met with during the year ; all the mothers recovered. These cases are classified below :

No.	Age of mother.	Confinement.	Sex of child.	Presentation.	Treatment.	Result to child.	Position of placenta.
2143	28	4th	M.	Footling	Forceps to after-coming head	L.	Marginal.
982	26	4th	F.	Vertex	Forceps	S.	,
1380	36	1st	M.	"	De Ribes' bag	L.	,
2085	28	6th	M.	Vertex and arm	Internal version	L.	,

VERSION was performed seven times in all. On six occasions it was done for transverse presentations, and once for placenta prævia.

BREECH PRESENTATIONS are recorded in 62 cases. Thirteen of these occurred in the 62 children born as a result of twin pregnancy, and the remaining 49 occurred in the remaining 2244 cases, giving an average of 1 in 45·8 cases. There were 14 cases of stillbirths.

MATERNAL DEATHS.—During the year five maternal deaths occurred. Two of these were due to septicæmia ; one occurred two days after delivery from pulmonary embolism. A short report of the other two fatal cases is given below.

Case of induction of labour for contracted pelvis ; purpura hæmorrhagica ; death from hæmorrhage. (From notes by Mr. S. H. Belfrage.)—Mrs. W—, æt. 30 (?). Patient had been married six years. In the first confinement patient had a difficult forceps delivery at full term ; in the second confine-

ment craniotomy was found necessary to deliver the child ; in the third pregnancy labour was induced at the seventh month, but the child only lived three months. Patient became pregnant again nine months after the last child was born. In February, 1899, when six months pregnant, she had some haemorrhage from the mouth lasting four days. She was admitted to St. Thomas's Hospital with marked purpuric spots over the whole body. She got quite well and was discharged on the 4th March. Owing to the presence of some contraction of the pelvis (the diagonal conjugate measuring $4\frac{1}{4}$ inches) it was decided to induce labour at the eighth month of pregnancy. On the 10th May, at 10 p.m., a bougie was introduced, and under chloroform the presentation was at first thought to be a vertex. Pains came on a few hours later and continued through the night. At noon on the 11th May patient was getting a little restless, and as the os was not dilating well a de Ribes' bag was introduced. At 3 p.m. patient began to bleed slightly from the mouth. At 10 p.m. the bag was expelled. Bleeding from the mouth continued and there were purpuric spots on the chest. The urine was free from blood. As the pains were now strong and progress retarded, the patient was put under chloroform, and the child, which was presenting by the breech, was delivered after bringing down a leg. There was considerable difficulty in delivering the after-coming head, and the child was born dead at 12.30 a.m. on the 12th May. There was rather smart haemorrhage immediately after delivery, which was controlled by kneading and compression of the uterus, and the placenta was expelled a few minutes later. A hot douche was now given, and it was then noticed that the patient, who had fully recovered from the anæsthetic, was showing signs of collapse. The pulse was small and very rapid, the face pale and the lips blanched. Two pints of saline solution with one ounce of brandy were injected into the rectum. Strychnine and ergotine were injected hypodermically. The patient, however, became rapidly worse, the blanching more extreme, cold sweating and "air hunger" set in, and she died at 1.30 a.m. Half an hour after death there was a copious eruption of purpuric spots all over the body. Two days after death blood was seen to well up

freely from the mouth, and decomposition rapidly set in. No post-mortem examination was allowed to be made. It seems probable that severe haemorrhage into the abdominal viscera occurred after delivery, and was the cause of the fatal termination of the case, as the amount of external haemorrhage was quite insufficient to account for the severity of the symptoms. Moreover no improvement followed the saline injections into the rectum, as is usually the case in ordinary post-partum haemorrhage when the bleeding has been arrested.

Case of ante-partum and post-partum haemorrhage; death.
(From notes by Mr. H. M. Scaping.)—Mrs. M—, æt. 36. Patient had had five children, and had severe floodings at each confinement. At the sixth confinement, on 4th June, 1899, the obstetric clerk was summoned at 10.45 a.m. He was informed that the patient had been losing blood all through the night. She was at that time very pale, and breathing was hurried. As the os was nearly fully dilated, the membranes were ruptured, and the child (which was dead) was born about half an hour later. The birth of the child was followed almost immediately by a great gush of blood. The placenta followed in about two minutes, without any expression being required, and with it came at least another quart of blood. After this the uterus contracted down well, though there was occasional dribbling of blood afterwards. Two drachms of ergot were administered. The patient was by this time greatly collapsed, with marked dyspnœa, extreme pallor, cold sweat, and mistiness of vision. On the arrival of Mr. Scaping the pulse could only just be felt at the wrist, and patient appeared to be moribund. Five minims of Liquor Strychninæ were given subcutaneously, and three pints of saline solution injected *per rectum*. The patient appeared to rally well, the pulse fell in frequency from 160 to 120, and one hour later, the improvement being well maintained, Mr. Scaping and the obstetric clerk left, strict orders having been given that the patient was not to be moved. At 3 p.m., *i.e.* two hours after this, Mr. Scaping was again sent for to see the patient, and on his arrival she was found to be dead. On inquiry it was found that the bed had been

remade, and the patient had been moved to the other side of the bed. It was stated that while the patient was being moved she suddenly became worse, and died almost immediately. The uterus appeared to be well contracted, and there was no evidence of further external haemorrhage. The cause of death was probably syncope. The haemorrhage before delivery was due to separation of the placenta from the uterine wall. No post-mortem examination was made.

CHILDREN BORN.—The number of children born during the year, including 31 cases of twin births, was 2306. Amongst these there were 73 cases of stillbirths. The following list indicates the circumstances under which the stillbirths occurred :

Natural labours	15
Premature labours	20
Twin births	10
Breech presentations	14
Placenta prævia	1
Accidental haemorrhage	3
Contracted pelvis	3
Transverse presentation	3
Prolapsed cord	4
	—
	73

The following table gives details of the 31 cases of twin births :

No. in Maternity Book.	Age of mother	No. of confine- ment.	Date of birth.	Sex.	Presentation.		1st. 2nd.	1st. 2nd.	Result to child.	Development of child.
					1st child.	2nd child.				
2515	21	2nd	Feb. 11	M.	Vertex	Vertex	L.	L.	L.	Full term.
2584	20	1st	," 7	F.	Breech	Breech	S.	S.	S.	,"
84	33	7th	March 17	F.	?	?	L.	L.	L.	,"
95	34	7th	Jan. 20	M.	?	?	L.	L.	L.	8 months.
123	26	2nd	," 25	M.	?	?	S.	S.	S.	7
396	30	5th	April 11	M.	Vertex	Vertex	L.	L.	L.	Full term.
430	35	7th	May 8	M.	?"	?"	L.	L.	L.	,"
641	37	8th	April 21	M.	?"	?"	L.	L.	L.	8 months.
677	25	4th	July 17	F.	Vertex	Vertex	S.	S.	S.	Full term.
793	32	1st	May 31	M.	Footling	Footling	L.	L.	L.	7 months.
902	40	10th	July 22	M.	?"	?"	L.	L.	L.	Full term.
911	24	3rd	Aug. 19	F.	Brech	Brech	L.	L.	L.	8 months.
930	20	1st	July 7	F.	?"	?"	L.	L.	L.	Full term.
1037	30	2nd	June 18	M.	?"	?"	S.	S.	S.	8 months.
1062	18	1st	Aug. 14	M.	Vertex	Vertex	L.	L.	L.	Full term.
1251	24	2nd	July 16	F.	Brech	Brech	L.	L.	L.	8 months.
1258	32	8th	Aug. 5	F.	?"	?"	L.	L.	L.	Full term.
1462	32	6th	Oct. 8	M.	?"	?"	L.	L.	L.	8 months.
1717	26	2nd	Sept. 8	M.	?"	?"	L.	L.	L.	?"
1730	26	2nd	Dec. 21	F.	Footling	Footling	L.	L.	L.	Full term.
1813	34	6th	Nov. 29	M.	?"	?"	S.	S.	S.	,"
1821	35	9th	," 18	M.	?"	?"	L.	L.	L.	,"
1881	25	3rd	Dec. 28	F.	Transver-	Transver-	L.	L.	L.	,"
1908	23	2nd	," 17	M.	Brech	Brech	L.	L.	L.	,"
1987	26	5th	Oct. 10	M.	Vertex	Vertex	L.	L.	L.	,"
2052	29	11th	Nov. 27	F.	?"	?"	L.	L.	L.	7 months.
2100	18	1st	Oct. 3	F.	?"	?"	L.	L.	L.	Full term.
2126	30	3rd	Dec. 19	M.	?"	?"	L.	L.	L.	8 months.
2356	23	2nd	," 24	F.	?"	?"	L.	L.	L.	5
2413	21	1st	Nov. 20	F.	?"	?"	L.	L.	L.	5
2539	38	11th	Nov. 17	M.	?"	?"	L.	L.	L.	5

STATISTICAL REPORT
OF
THE OPHTHALMIC DEPARTMENT
FOR THE YEAR 1899.

BY T. HOBAN, M.B.LOND.,
LATE OPHTHALMIC HOUSE SURGEON,
AND
J. E. KILVERT, M.R.C.S., L.R.C.P.,
OPHTHALMIC HOUSE SURGEON.

DURING the year there were 3868 new out-patients (exclusive of renewed letters), and 223 admissions relating to 204 in-patients; 173 major operations were performed. Total attendances in out-patient department 9081.

General Statement of Ophthalmic Patients.

Number of beds in Ophthalmic Ward (including the small ward)...	..	25
Number of patients in ward, Jan. 1st, 1899 ...	...	12
" " Dec. 31st, 1899...	...	11
" of discharges or deaths .....	...	223
	Male.	Female.
Discharged cured ...	81	44
,, relieved or other causes	72	25
Died	0	1
	153	70
		223

The death recorded above was due to septic meningitis, following a perforating wound of orbit and base of skull.

Table of In-patients (204).

Cataract :		Orbit :	
Lamellar	7	Necrosis of	2
Congenital (monocular)	1	Sarcoma of choroid	1
Traumatic	1	Pseudo-glioma	1
Senile	32	Retinitis	2
? cause	2	Detached retina	1
Dislocated lens	1	Optic atrophy	3
Membrane in pupil	10	" " Leber's	1
Iritis	3	" neuritis	2
Rheumatic	3	Irido-cyclitis	2
Syphilitic	2	Sympathetic ophthalmia	1
Post-operative	1	Lid :	
Cornea :		Wound of	3
Keratitis	3	Deformity	1
" interstitial	4	Ectropion	1
Ulcerative "	10	Symblepharon	1
Purulent	3	Conjunctiva :	
Hypopyon	6	Inflammation	7
Leucoma	2	Granuloma	1
" adherent	1	Syphilitic lesion	1
Herpes of	1	Trachoma	1
Keratoconus	2	Episcleritis	1
Glaucoma :		Paralysis third nerve	1
Acute	5	Buphthalmos	1
Subacute	3	Frontal sinus empyema	1
Chronic	5	Lacrymal :	
Secondary	5	Obstruction	7
Globe :		Abscess	2
Rupture	6	Mucocele	2
Perforating wound	22	Strabismus :	
Shrunken	2	Convergent	4
Painful	2	Divergent	2
Orbit :		Hyphaema	1
Growth (in or about)	5		

Operations performed.

Frontal sinus empyema:		Iridectomy:	
Trephining	3	Glaucoma	14
Lacrymal apparatus:		Preliminary (to extraction)	7
Obstruction	5	Episcleritis	1
Abscess	1	Recurrent iritis	1
Sac excised	2	Prolapsed iris	5
,, cauterised	1	Adherent leucoma	2
Globe:		Artificial pupil	1
Excised for injury	15	Wound of lens and iris	1
,, „ disease	16	Extraction:	
Lids:		Hard cataract	28
Stitching	1	Discussion:	
Plastic	4	Lamellar cataract (including congenital)	12
Symblepharon	1	Curette evacuation	8
Orbit:		Membrane in pupil:	
Abscess	1	Needling	14
Plastic	1	Scleropuncture	1
Growth	1	Iridotomy	1
Muscles:		Rodent ulcer	1
Tenotomy	9	Curetting conjunctiva	1
Advancement	3	Dermoid excised (angle of orbit)	1
Cornea:			—
Cautery	3		
Tattooing	4		173
Paracentesis anterior chamber	3		

Mr. Lawford.—Extraction of Hard Cataract,

No. in Vol. '99.	Report No.	Name and date.	Sex.	Age.	Anæs- thetic.	Operation.
HARD.						
120 (Vol. '98)	1	W. T. Jan. 13th	M.	64	Cocain	Right; extraction upwards with iridectomy. Incision very short, with good conjunctival flap. Iridectomy wound enlarged with scissors. Lens moved under cystotome, and escaped under margin of wound. Finally extracted by means of sharp hook
11	2	A. G. Feb. 2nd	F.	64	"	Right; extraction upwards with iridectomy. Section rather short and conjunctival flaps only at the ends. Lens extruded with difficulty. Small quantity of soft lens matter removed
34	3	P. C. March 30th	M.	47	"	Left; extraction upwards with iridectomy; large conjunctival flap. Lens came away easily
37	4	M. P. April 6th	F.	69	"	Left; extraction upwards with iridectomy; good conjunctival flap. On attempting to express some of the remaining soft lens matter some vitreous escaped
47	5	E. A. May 11th	F.	67	"	Right; extraction upwards with iridectomy; conjunctival flap at ends of incision. Lens soft
46	6	S. C. May 12th	F.	65	"	Left; extraction upwards with iridectomy. Lens very hard; came away easily. Capsule tough and degenerate
66	7	E. W. June 22nd	F.	48	—	Right; extraction upwards with iridectomy. Lens soft. Good conjunctival flap
74	8	E. K. July 7th	F.	72	Cocain	Left; extraction upwards with iridectomy. Lens easily removed. Quantity of soft lens matter remained behind; some got away

16 Cases; Soft, 5 Cases; Dislocated Lens, 1 Case.

Progress of case.	Secondary operation.	Result.
Patient had some iritis with striped keratitis. A good clear gap remained. Fundus normal. No floating opacities in vitreous	—	April 25th, 1899— R.V. = $\frac{+10\cdot0 \text{ D. sph.} + 2\cdot0 \text{ D. cyl.}}{+}$ = $\frac{6}{18}$.
Satisfactory. Slight striped keratitis developed near wound. Membrane left in pupil	—	March 30th, 1899— + 12·0 D. sph. = $\frac{6}{18}$ fully. + 16·0 D. sph. = J. 6.
Satisfactory. Slight iritis developed, but soon subsided	—	April 20th, 1899— L.V. = $\frac{+10\cdot0 \text{ D. sph.} + 2\cdot0 \text{ D. cyl.}}{+}$ = $\frac{6}{18}$. $\frac{+14\cdot0 \text{ D. sph.}}{+ 2\cdot0 \text{ D. cyl.}}$ = J. 6.
Patient had albuminuria, but progress was very satisfactory	June 29th, 1899— Needling under cocaine; good gap	July 7th, 1899— L.V. = $\frac{+14\cdot0 \text{ D. sph.} + 2\cdot0 \text{ D. cyl.}}{+}$ = $\frac{6}{12}$. $\frac{+18\cdot0 \text{ D. sph.}}{+ 2\cdot0 \text{ D. cyl.}}$ = J. 1.
Anterior chamber slow in reforming. Considerable vascular disturbance. Slight iritis	—	June 2nd, 1899— R.V. = $\frac{+11\cdot0 \text{ D. sph.} + 2\cdot0 \text{ D. cyl.}}{+}$ = $\frac{6}{15}$. $\frac{+15\cdot0 \text{ D. sph.} + 2\cdot0 \text{ D. cyl.}}{+}$ = J. 6.
Satisfactory. Striped keratitis developed near the wound	—	Aug. 15th, 1899— L.V. = $+11\cdot0 \text{ D. sph.} + 16\cdot0 \text{ D. sph.}$ = $\frac{6}{18}$. = J. 1 slowly.
Satisfactory. Slight striped keratitis. Dense membrane left in pupil	—	Nov. 8th, 1899— R.V. = $+12\cdot0 \text{ D. sph.} + 16\cdot0 \text{ D. sph.}$ = $\frac{6}{18}$. = J. 1.
Satisfactory. She had temporary mental trouble. Membrane left in pupil	Nov. 9th, 1899— Membrane needled	March 30th, 1900— L.V. = $+17\cdot0 \text{ D. sph.} + 20\cdot0 \text{ D. sph.}$ = $\frac{6}{18}$ (4). = J. 4 well. J. 1 slowly.

No. in Vol. '99.	Report No.	Name and date.	Sex.	Age.	Anæs- thetic.	Operation.
43	9	W. J. July 13th	M.	70	Cocain	Preliminary iridectomy : right upwards May 5th; left upwards May 11th. Right extraction upwards; "good" conjunctival flap. Lens soft. Much soft matter left behind, but came away on being expressed
84	10	M. McP. July 27th	F.	70	„	Left; extraction upwards with iridectomy; very small conjunctival flap. Lens came easily away
98	11	O. C.	M.	43	„	Left; extraction upwards with iridectomy; moderate conjunctival flap. Cortex of lens soft, and came away first; nucleus afterwards
105	12	H. S. Oct. 5th	M.	70	„	Left; extraction up with iridectomy. Incision rather irregular because of patient's restlessness. Conjunctiva torn where it was held by fixation forceps. Lens came away easily. Some soft matter remained
107	13	H. K. Oct. 4th	M.	54	„	Right; extraction upwards with iridectomy; lateral conjunctival flaps. Some soft lens matter, all expressed
111	14	M. S. Oct. 5th	F.	43	„	Left; extraction upwards; no iridectomy; small conjunctival flap. Iris fell over knife, but no gap made. Lens soft, came away, leaving clear pupil. Iris easily replaced and pupil central. Eserine used
123	15	M. S. Nov. 15th	F.	85	„	Right; extraction upwards with iridectomy; good flap. Hard nucleus; some lens matter easily expressed
129	16	E. M.	F.	64	„	Left; extraction upwards with iridectomy; good flap, but was partially cut away during the iridectomy. Lens large and hard
SOFT.						
42	17	J. N. April 20th	M.	16	„	Left needled for lamellar cataract. Re-needed Sept. 28th

Progress of case.	Secondary operation.	Result.
Considerable hyphaëma, which absorbed, leaving a dense membrane in pupil	July 13th—Needling; good gap	March 2nd, 1900— R.V. = + 10·0 D. sph. = $\frac{6}{12}$ partly. + 16·0 D. sph. = J. 8.
Satisfactory. Fine membrane in pupil	—	Sept. 19th, 1899— L.V. = + 10·0 D. sph. = $\frac{6}{12}$. + 15·0 D. sph. = J. 1.
Day after considerable oedema of lids and conjunctiva. For three days eye quiet. No iritis	—	Oct. 12th, 1899— L.V. = $\frac{+ 11·0 \text{ D. sph.} + 1·0 \text{ D. cyl.}}{+ 16·0 \text{ D. sph.} + 1·0 \text{ D. cyl.}} = \frac{6}{9}.$ = J. 1.
Anterior chamber re-formed next day, but found empty second day; soon re-formed. Oct. 10.—Hyphaëma formed during night, which disappeared in a few days. Slight iritis. Iris did not react well to atropine	—	Nov. 6th, 1900— L.V. = + 12·0 D. sph. = $\frac{6}{12}$. + 16·0 D. sph. = J. 4.
Satisfactory. Dense flake of capsule and some lens matter in lower part of pupil	—	Dec., 1899— R.V. = + 11·0 D. sph. = $\frac{6}{9}$. + 15·0 D. sph. = J. 1.
Anterior chamber re-formed next day. Pupil small and central. Oct. 27th.—Atropine used. Iris dilated irregularly. Slight membrane present. Nov. 9th.—Pupil central, circular, and active	—	Nov. 9th, 1899— L.V. = + 12·0 D. sph. = $\frac{6}{9}$. + 16·0 D. sph. = J. 1.
Right eye did very well, although patient had advanced senile changes	—	March 5th, 1900— Wrote a letter very well.
Iris did not react well to atropine. No iritis or keratitis punctata	—	Dec. 6th, 1899— R.V. = + 10·0 D. sph. = $\frac{6}{12}$. + 15·0 D. sph. = J. 6.
Lens matter came well forwards. Eye quiet	—	Dec. 15th, 1899— L.V. = + 11·0 D. sph. = $\frac{6}{9}$. + 15·0 D. sph. = J. 1.
		Jan. 12th, 1900— L.V. = + 5·0 D. sph. = $\frac{6}{9}$. + 9·0 D. sph. = J. 1.

No. in Vol. '99.	Report No.	Name and date.	Sex.	Age.	Anæsthetic.	Operation.
49	18	W. H. May 18th	M.	4½	Ether	Monocular congenital cataract. Right needled. Re-needed June 1st
61	19	G. B. June 15th	M.	14	Cocain	Left needled for lamellar cataract. Re-needed June 29th
73	20	A. S. July 7th	M.	8	„	Traumatic cataract. Lens wounded by a thorn. Incision with keratome on outer side and curette evacuation
125	21	E. H. Dec. 21st	M.	16	„	Traumatic cataract, left. Lens wounded with needle on Nov. 15th. Corneal incision on outer side with keratome and curette evacuation. Slight haemorrhage from iris
DISLOCATED LENS.						
132	22	S. B.	F.	60	Ether	Right (many years ago had operations at Moorfields for iritis, also at St. Thomas's in 1894). Lens was dislocated into vitreous; lately it has come forwards into anterior chamber. Downward flap made with Graefe. The lens was removed with a scoop. No vitreous escaped

*Mr. Fisher.—Extraction of Hard
HARD.*

1	23	S. B. Jan. 11th	M.	54	Cocain	Preliminary iridectomy Oct. 6th, 1897. Right; extraction upwards. Conjunctival flap at ends of incision. Lens moveable under cystotome. Came away easily
10	24	E. G. March 1st	F.	70	„	Right; extraction upwards with iridectomy. Incision rather corneal. Lens large and soft. Free haemorrhage
16	25	H. M. May 31st	M.	70	„	Preliminary iridectomy April 19th, 1899. Left; extraction upwards. Peripheral incision. Lens came away easily

Progress of case.	Secondary operation.	Result.
Lens matter came forwards. Eye quiet. After re-needling absorbed rapidly	—	—
Lens matter came well for- wards after second needling. Eye quiet	—	—
Some congestion. Lens matter absorbed slowly	—	—
For a month after injury eye remained quiet, then became painful and congested, and tension increased, necessi- tating evacuation	—	June 15th, 1900— Left quiet.

Anterior chamber re-formed in 24 hours. Eye remained quiet. Slight striped kera- titis near wound	—	—
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Cataract, 10 Cases; Soft, 5 Cases.

Satisfactory. Large posterior staphyloma. Vitreous opa- city	—	March 6th, 1899— $R.V. = \frac{-12\text{D. sph.}}{-1\text{D. cyl.}} = \frac{6}{3}$. J. 16 unaided.
Anterior chamber very slow in re-forming. Wound slow in healing. Slight striped kera- titis. March 22nd—Right well	—	April 12th, 1899— $R.V. = \frac{+10\text{D. sph.}}{+3\text{D. cyl.}} = \frac{6}{12}$. $+14\text{D. sph.}$ $+3\text{D. cyl.} = J. 1$.
Had atropine irritation in April. Pupil dilated well with hyoscine and cocaine. One posterior synechia. On Sept. 4th, 1900, could read $\frac{6}{8}$ partly and J. 1 well with his glasses	—	July 19th, 1899— $L.V. = \frac{+10\text{D. sph.}}{+2\text{D. cyl.}} = \frac{6}{6}$. $+14\text{D. sph.}$ $+2\text{D. cyl.} = J. 1$.

No. in Vol. '99.	Report No.	Name and date.	Sex.	Age.	Anæs- thetic.	Operation.
22	26	L. G. June 7th	F.	69	Cocain	Left; extraction upwards with iridectomy. Conjunctival flap at edges. Lens came away easily
31	27	M. A. July 12th	F.	73	„	Left; extraction upwards with iridectomy; good flap. Lens sticky, but came away easily
41	28	M. H. July 23rd	F.	60	„	Right; extraction upwards with iridec- tomy. Small coloboma. Soft lens matter left in pupil
41	29	M. H. Sept. 13th	F.	60	„	Left; extraction upwards with iridectomy. Soft lens matter expressed
44	30	S. H. Sept. 27th	F.	47	Cocain, ether	Preliminary iridectomy in right and left eye Sept. 6th. Right; extraction up- wards with iridectomy; good flap. Lens expressed with difficulty
40	31	J. T. Oct. 25th	F.	86	Cocain	Left; extraction upwards with iridectomy. Lens soft. Most of the soft material removed by expression
50	32	W. R. Oct. 25th	M.	68	„	Right; extraction upwards. Iris fell over Graefe, so iridectomy was performed with same incision
SOFT.						
12	33	A. A. March 1st	M.	8	Ether	Left lamellar cataract needled. Curette evacuation March 8th with keratome; incision made on outer side
12	34	A. A. Sept. 27th	M.	8	„	Right needled. Curette evacuation Oct. 11th, as in left
48	35	H. H. Oct. 18th	M.	16	Cocain	Right lamellar cataract needled. Curette evacuation Oct. 25th with keratome
51	36	E. S. Nov. 1st	M.	9	Ether	Right lamellar cataract needled. Curette evacuation by incision with keratome. Much lens matter escaped
54	37	F. T. Nov. 29th	F.	18	Cocain	Right lamellar cataract needled. Curette evacuation Dec. 4th by incision with kera- tome. Lens matter escaped with great force and rapidity. Some vitreous escaped

Progress of case.	Secondary operation.	Result.
On June 16th there was slight iritis; T. — 2. June 28th. —Eye quiet	—	Sept. 18th, 1899— L.V. = + 12·0 D. sph. = $\frac{6}{12}$. + 16·0 D. sph. = J. 1.
Satisfactory. One posterior synechia, which gave way under atropine	—	Oct. 30th, 1899— L.V. = + 12·0 D. sph. = $\frac{6}{9}$. + 16·0 D. sph. = J. 1.
Anterior chamber five days in re-forming. Sickness for a few days after operation, causing hyphæma, which quickly absorbed	—	Feb. 7th, 1900— R.V. = + 9·0 D. sph. = $\frac{6}{18}$. + 13·0 D. sph. = J. 2.
Very satisfactory. Good gap in pupil	—	Feb. 7th, 1900— L.V. = + 9·0 D. sph. = $\frac{6}{18}$. + 13·0 D. sph. = J. 2.
Satisfactory. Patient is a typical cretin. Some membrane in pupil	Dec. 6th, 1899— Right needled	Dec. 11th, 1899— R.V. = $\frac{+ 12·0 \text{ D. sph.} + 1·5 \text{ D. cyl.}}{+ 1·5 \text{ D. cyl.}} = \frac{6}{9}$. $\frac{+ 16·0 \text{ D. sph.}}{+ 1·5 \text{ D. cyl.}} = \text{J. 2.}$
Satisfactory. Patient became delirious soon after operation. No ill effects followed	Jan. 3rd, 1900— Left needled	Jan. 8th, 1900— L.V. = + 12·0 D. sph. = $\frac{6}{6}$. + 16·0 D. sph. = J. 14.
Very satisfactory	—	Dec. 11th, 1899— R.V. = + 10·5 D. sph. = $\frac{5}{6}$ partly. + 16·0 D. sph. = J. 1.
Satisfactory. Lens matter absorbed by June 27th	June 28th, 1899— Left needled	$\left\{ \begin{array}{l} \text{Aug. 2nd, 1900—With his glasses:} \\ \text{R. and L. + 11·0 D. sph. and} \\ \text{+ 14·0 D. sph.} \\ \\ \text{R. and L. = } \frac{6}{6} \text{ and J. 1.} \end{array} \right.$
Satisfactory	—	
Slight congestion after needling, but quiet after the evacuation	—	March 30th, 1900, and Aug. 24th, 1900— R.V. = + 10·0 D. sph. = $\frac{5}{9}$ partly. + 14·0 D. sph. = J. 1.
Slight congestion from swelling of lens; quiet after evacuation	—	Oct. 16th, 1900— R.V. = + 13·0 D. sph. = $\frac{6}{12}$. + 16·0 D. sph. = J. 1.
Very satisfactory	—	Sept. 3rd, 1900— R.V. = + 11·0 D. sph. = $\frac{6}{12}$. + 15·0 D. sph. = J. 1.

Analysis of Operations.

Hard cataract 28 cases, Mr. Lawford's cases being 1 to 16 and 22.

Case No. 22. Extraction of lens dislocated several years ago was performed with a scoop, through a sclero-corneal incision downwards. Ether was the anaesthetic used.

Mr. Fisher's cases, being 23 to 32 :

There was one case (not in this report) of extraction of lens, which was wounded in a previous operation for iridectomy in a case of glaucoma (vol. 1899, No. 45).

In all cases the section was made with a Gräfe's knife along the corneo-scleral junction and in an upward direction (except in No. 22). Iridectomy was performed in all cases except No. 14. This was a case of complete cataract in a woman of forty-three years, whose other eye was normal. Preliminary iridectomy was performed in cases Nos. 9, 23, 25, 30.

In all cases atropine was used as soon as the anterior chamber was securely sealed, usually on the third day.

The iris was injured by the knife in cases 14 and 23. In the latter a sector of the iris was cut away, so further iridectomy was unnecessary. Vitreous escaped in case No. 4.

A 2 per cent. sterile solution of cocaine hydrochlorate was used as an anaesthetic in all cases except Nos. 22 and 30. No. 30 was a cretin, and her self-control could not be depended upon. Ether was used.

Soft cataract 10 cases, Mr. Lawford's being 17 to 21, Mr. Fisher's being 33 to 37.

No. 18 was a case of monocular congenital cataract. Nos. 20 and 21 were traumatic, due to perforating wounds.

The remainder were lamellar cataracts.

In cases 17, 18, and 19, needling was the only operation performed. Curette evacuation was resorted to in cases 20 and 21, and in all Mr. Fisher's cases, a few days after the needling.

In case 21 slight haemorrhage followed the evacuation, and in case 37 the vitreous escaped, because the lens matter came away with such a rush on withdrawal of the keratome.

Cocain hydrochlorate was used in cases 17, 19, 20, 21, 35, 37. In all other cases ether was used.

In case No. 33 both eyes were operated on.

R E P O R T
OF THE
DEPARTMENT FOR DISEASES OF THE SKIN,
1899.

By T. PERRIN, M.B.LOND., L.R.C.P., M.R.C.S.

TABLE I.—*Statistical*

DISEASES.	Jan.		Feb.		March.		April.	
	M.	F.	M.	F.	M.	F.	M.	F.
CLASS I.—HYPERÆMIA.								
Erythema			1		4	1	2	2
CLASS II.—EXUDATIONES.								
Dermatitis								
" exfoliativa								
" herpetiformis								
Eczema	5	6	9	9	5	4	2	5
Furunculosis						1		
Impetigo contagiosa			2		2		1	2
Herpes simplex								
" zoster	1			2				
Lichen planus				1				1
Psoriasis			1	5	4	6	1	6
Pemphigus								
Pityriasis rosea							1	
Urticaria			1	1			1	
Pompholyx								
CLASS III.—HÆMORRHAGIA.								
Purpura simplex						1		
" rheumatica								
CLASS IV.—HYPERTROPHIA.								
Verruca								
Morphea								1
Keratosis pilaris								
CLASS V.—ATROPHIA.								
Melano-leucodermia								
CLASS VI.—NEOPLASMATA.								
Lupus vulgaris			2	1				1
Tubercular ulceration								
Syphilis, primary								
" secondary			1					
" tertiary				1	1	2	3	2
" congenital			1					
Lupus erythematosus		1						

Table, 1899.

May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Totals.		Total.
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
...	...	...	...	1	...	2	3	1	...	...	...	2	1	...	7	13	20	
1	...	3	...	3	...	...	...	...	...	...	...	...	...	7	...	1	7	1
...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	1	1	1	
9	7	3	4	10	5	7	13	10	8	10	10	7	7	2	8	79	86	165
1	...	...	1	...	...	...	...	...	...	...	...	...	...	3	...	3	3	
2	...	3	...	2	1	1	2	3	...	3	2	1	2	...	17	12	29	
...	1	...	2	...	...	...	...	...	...	...	...	1	...	4	...	4	4	
...	...	1	...	...	...	1	...	...	...	...	...	...	...	2	3	3	5	
...	...	...	...	...	...	1	1	1	...	...	...	1	...	2	3	3	5	
4	1	3	4	6	4	6	3	6	3	4	...	2	...	40	31	71		
...	...	1	1	...	1	...	1	...	1	...	...	...	...	3	1	4	4	
1	...	1	...	1	1	1	1	1	1	...	1	...	1	7	6	13		
...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	1	1	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	1	
1	...	...	...	...	...	1	1	1	...	1	...	...	...	4	1	5		
...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	3	1	3	
...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	1	1	
...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	2	2	2	
...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	2	4	6	
...	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...	2	2	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	1	
...	...	...	...	...	...	2	...	...	...	...	2	...	1	2	1	6		
...	2	1	3	2	2	...	1	1	5	...	2	3	1	17	15	32		
...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	4	4	4	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	1	

TABLE I—

DISEASES.	Jan.		Feb.		March.		April.	
	M.	F.	M.	F.	M.	F.	M.	F.
CLASS VII.—NEUROSES.								
Pruritus	1	1
Incipient Raynaud's disease	1	...
CLASS VIII.—MORBI APPENDICIS.								
<i>Sebaceous glands.</i>								
Seborrhœa sicca	2	1	2	...	4	3
Acne vulgaris	1	...	1	1	1
,, indurata
,, rosacea	2	1	...	1	2	1
,, varioliformis	1
<i>Hair-follicles.</i>								
Alopecia areata	2	1	2	2	2	5
,, universale	1	...	...
Sycosis
Folliculitis	1	...	...	...
Comedones
<i>Nails.</i>								
Atrophy
<i>Sweat-glands.</i>								
Sudamina	1	...	...
Miliaria
CLASS IX.—PARASITICÆ.								
A. <i>Vegetable.</i>								
Tinea circinata	1	...	...	1
,, tonsurans	1	...	2	...	1	5
,, versicolor
B. <i>Animal.</i>								
Scabies	1	..	2	...	1	...
Pediculi	2	1	1	1	2
? Parasitic dermatitis	1	1	...	...	...	...
ADDENDA.								
Septic wounds and cellulitis
Granular conjunctivitis
Rhinitis
Ulcer on arm with enlarged axillary glands	1	...	...	...

continued.

May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Totals.		Total.
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	2	3	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	
1	1	1	...	1	...	1	...	1	...	1	1	1	2	15	11	26		
...	2	...	...	...	1	1	...	1	1	...	2	...	...	5	7	12		
...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1		
...	1	...	3	2	2	...	...	2	...	1	...	3	...	9	16	25		
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1		
2	3	5	2	1	2	2	1	4	1	5	3	1	2	3	3	23	57	
...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	3	...	3	
...	1	...	...	...	...	...	...	...	2	...	1	...	...	...	4	...	4	
...	1	...	...	1	1	...	2	...	...	2	...	...	...	5	2	7		
...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	
...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	1	1	
...	...	...	...	1	...	1	...	...	...	...	...	...	...	1	2	...	1	
...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	2	...	2	
1	...	1	2	...	...	2	...	1	...	...	1	...	...	8	2	10		
...	2	6	1	3	2	3	3	3	...	1	1	...	...	21	15	36		
1	...	...	2	...	...	...	...	...	...	1	...	...	...	3	1	4		
3	1	...	2	...	1	...	...	1	...	...	1	...	3	1	14	4	18	
2	2	...	2	1	1	1	2	2	2	2	3	...	...	4	13	17	30	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	2	
...	...	1	...	...	...	...	...	...	...	...	1	...	...	1	2	1	3	
1	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	1	1	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	
														342	304	646		

TABLE II.—*Age in certain Diseases.*

		Under 1 year.	1-5.	5-10.	10-20.	20-30.	30-40.	40-50.	50-60.	60-70.	70-80.	80-90.
Eczema	M.	7	2	9	18	13	12	13	7	4	5	—
	F.	3	5	7	7	11	13	7	13	7	2	2
Total		10	7	16	25	24	25	20	20	11	7	2
Impetigo	M.	2	5	4	6	—	—	—	—	—	—	—
	F.	1	1	4	5	1	—	—	—	—	—	—
Total		3	6	8	11	1	—	—	—	—	—	—
Psoriasis	M.	—	1	3	12	11	4	5	3	1	—	—
	F.	—	—	3	9	4	6	6	3	—	—	—
Total		—	1	6	21	15	10	11	6	1	—	—
Alopecia	M.	—	1	6	17	9	2	1	—	1	—	—
	F.	—	2	1	10	4	4	2	—	—	—	—
Total		—	3	7	27	13	6	3	—	1	—	—
Tinea tonsurans	M.	—	3	10	6	—	2	—	—	—	—	—
	F.	—	2	11	2	—	—	—	—	—	—	—
Total		—	5	21	8	—	2	—	—	—	—	—
Tinea circinata	M.	—	—	2	6	—	—	—	—	—	—	—
	F.	—	—	1	1	—	—	—	—	—	—	—
Total		—	—	3	7	—	—	—	—	—	—	—

REPORT
OF THE
THROAT DEPARTMENT OF ST. THOMAS'S
HOSPITAL IN 1899.

By H. BETHAM ROBINSON, M.S.LOND.,
SURGEON IN CHARGE OF THE DEPARTMENT.

THE following statistical tables have been compiled upon the same lines as last year :

Total Number of New Cases treated during the Year 1899.

	Number of patients.		
	Male.	Female.	Total.
A. Affections of the mouth, fauces, and tonsils .	113	119	232
B. Affections of the nose and accessory cavities .	28	51	79
C. Affections of the naso-pharynx, pharynx, and œsophagus	170	155	325
D. Affections of the larynx	33	22	55
E. General and miscellaneous affections	7	16	23
F. Renewed letters	14	17	31
Totals	365	380	745

A. Affections of the Mouth, Fauces, and Tonsils.

Disease.	Number of patients.		
	Male.	Female.	Total.
Stomatitis	1	1	2
Hypertrophy of papillæ of tongue	0	2	2
Abscess of tongue	1	0	1
Gumma of tongue	0	1	1
Epithelioma of tongue	2	0	2
Hypertrophy of lingual tonsil	0	2	2
Mucous patches on tonsils and soft palate	15	7	22
Gummata on soft palate	0	2	2
Hypertrophy of uvula	1	0	1
Post-diphtheritic paralysis of soft palate	1	0	1
Acute and subacute tonsillitis	39	22	61
Tonsillar and peritonsillar abscess	7	9	16
Chronic follicular tonsillitis	3	8	11
Hypertrophy of tonsils	42	64	106
Gumma of tonsil	0	1	1
Epithelioma of tonsil	1	0	1
Totals	113	119	232

B. Affections of Nose and Accessory Cavities.

Disease.	Number of patients.		
	Male.	Female.	Total.
Acute and subacute rhinitis	2	1	3
Hypertrophic rhinitis	9	11	20
Polypoid hypertrophy over inferior turbinal	0	4	4
Atrophic rhinitis	1	10	11
Ozæna	1	3	4
Deflected nasal septum	2	1	3
Septal spur	1	1	2
Perforation of septum	5	6	11
Tuberculous ulceration of nasal cavities	0	2	2
Mucous polypus	6	8	14
Antral empyema	0	1	1
Hay fever and neuroses	1	3	4
Totals	28	51	79

c. *Affections of the Naso-pharynx, Pharynx, and Oesophagus.*

Disease.	Number of patients.		
	Male.	Female.	Total.
Acute naso-pharyngitis	2	1	3
Acute and subacute pharyngitis	21	7	28
Septic pharyngitis	1	0	1
Chronic pharyngitis	11	12	23
Granular pharyngitis	28	25	53
Adenoid vegetations	48	44	92
Adenoid vegetations with hypertrophied tonsils	53	57	110
Syphilitic ulceration and gummatous of pharynx	3	8	11
Pharyngomycosis leptothrixia	0	1	1
Sarcoma of naso-pharynx	1	0	1
Carcinoma of oesophagus	2	0	2
Totals	170	155	325

d. Affections of the Larynx.

E. General and Miscellaneous Affections.

Disease	Number of patients.		
	Male.	Female.	Total.
Diphtheria	2	3	5
Enlarged cervical glands	1	2	3
Enlarged thyroid	0	3	3
Mastoid	1	1	2
Alveolar abscess	0	1	1
Medical and trivial	3	6	9
Totals	7	16	23

The following Operations were performed in the Out-patients' Theatre under a general Anæsthetic administered by Mr. Crouch.

Disease.	Number of patients.		
	Male.	Female.	Total.
Removal of adenoids	62	72	134
Removal of adenoids and tonsils	32	26	58
Removal of tonsils	1	3	4
Totals	95	101	196

REPORT
OF THE
EAR DEPARTMENT OF ST. THOMAS'S
HOSPITAL
FOR THE YEAR 1899.

By FRANCIS C. ABBOTT, M.S.,
SURGEON IN CHARGE OF THE DEPARTMENT.

EARLY in this year an important change was introduced into the working of the department. A special morning has been set apart for the performance of all operations requiring a general anæsthetic.

At this time we are able to use the new out-patient operation theatre, and Dr. Low attends to administer the anæsthetics.

By this arrangement the whole of Monday afternoon is set free for clinical work, giving increased facilities both of time and space.

Operations of urgency, such as paracentesis of the membrane, and minor operations under cocaine are still done on that day, and are not included in the operation table.

All the more serious complications of middle ear suppuration are at once admitted to the wards, so that of the treatment of these as well as of a certain number of chronic cases admitted for operations of radical cure, no mention is made in this report.

For help in the preparation of the tables I am indebted to Mr. Mennell, clinical assistant to the department.

New Cases treated during 1899.

Disease.	Males.	Females.	Total.
Diseases of the external ear	68	35	103
" " middle ear	260	242	502
" " internal ear	9	11	20
" " nose, mouth, and pharynx	11	17	28
Total	348	305	653

	Males.	Females.	Total.
A. DISEASES OF THE EXTERNAL EAR.			
Sebaceous cyst of auricle	2	—	2
Papilloma of auricle	—	1	1
Otitis externa	4	2	6
Eczema of meatus	1	1	2
Abscess of meatus	5	1	6
Polypus of meatus	1	1	2
Furuncle of meatus	3	1	4
Condylomata of meatus	—	1	1
Periostitis of meatus	—	1	1
Foreign bodies in meatus	1	2	3
Cerumen	51	24	75
Total	68	35	103

	Males.	Females.	Total.
B. DISEASES OF THE MIDDLE EAR.			
Otitis media :			
Acute	4	2	6
Chronic suppurative	108	74	182
" " with polypus	10	5	15
" " non-suppurative	40	54	94
Mastoid abscess	2	2	4
Old mastoid disease	3	6	9
Rupture of membrana tympani	1	—	1
Senile changes in membrana tympani	1	1	2
Healed perforations in membrana tympani	1	3	4
Cicatrical changes in membrana tympani	6	2	8
Eustachian obstruction :			
Adenoids	71	79	150
Other causes	13	14	27
Total	260	242	502

	Males.	Females.	Total.
C. DISEASES OF THE INTERNAL EAR.			
Deaf-mutism	2	1	3
Menière's symptoms	1	2	3
Nerve tinnitus	—	1	1
Nerve deafness	4	3	7
Syphilis	2	4	6
Total	9	11	20
D. DISEASES OF THE NOSE, MOUTH, AND PHARYNX			
Rhinitis	3	—	3
Hypertrophic rhinitis	—	2	2
Atrophic rhinitis and ozæna	—	2	2
Nasal polypi	2	3	5
Ulceration of septum nasi	—	1	1
Nasal spur	2	—	2
Deflected septum nasi	1	—	1
Empyema of antrum of Highmore	—	1	1
Periostitis of superior maxilla	—	1	1
Dental caries	—	2	2
Tonsillitis	1	—	1
Hypertrophied tonsils	1	2	3
Chronic pharyngitis	1	2	3
Adenitis of cervical glands	—	1	1
Total	11	17	28

Table of Operations performed under a General Anæsthetic.

	Males.	Females.	Total.
For tonsils and adenoids			
For nasal polypus	81	84	165
For aural polypus	1	—	1
For tumour of auricle	5	5	10
Ossiculectomy	—	1	1
Turbinectomy	4	3	7
Total	91	96	187

REPORT
ON THE
CLINICAL LABORATORY FOR 1899.

By LOUIS L. JENNER, M.B.,
SUPERINTENDENT.

THE total number of specimens sent to the Laboratory for examination during the year was 1728, being about 200 more than were received last year.

Tumours, etc.—Sections were cut from 407 specimens from the operating theatres or out-patients' and special departments. These were for the most part examined and reported on by Mr. Shattock.

Of these—

137 were carcinomas.

29 were sarcomas.

4 were rodent ulcers.

The remainder consisted of non-malignant tumours, granulation tissue, various inflammatory conditions, enlarged glands, etc.

The clinical and microscopical diagnosis agreed in 378 instances, and disagreed in 29.

Serum reaction for typhoid fever.—The Widal-Grünbaum test was done 161 times in all. In 77 cases the reaction was negative, in 57 positive, and in 27 doubtful. The test used

was the production of definite clumps with loss of motility more or less complete, within half an hour, when the suspected serum was diluted fifty times. The culture used was always an agar smear of not more than twenty-four hours' growth, the bacilli being washed off the medium with distilled water, and filtered through paper.

The test was compared with the diazo reaction in 51 cases. It agreed with the latter and with the final clinical diagnosis 19 times, *i. e.* 9 positive and 10 negative.

The two tests agreed, but differed from the final clinical diagnosis 4 times, in each case the tests being negative.

The two tests disagreed 15 times, and here the serum test and the final clinical diagnosis agreed 8 times, the diazo reaction being correct according to the clinical diagnosis 7 times.

In the remaining cases the serum test was doubtful.

Adding these figures to those obtained in 1898, the tests were compared 97 times; they agreed together and with the final clinical diagnosis 38 times: the two tests agreed together, but disagreed with the final clinical diagnosis 12 times, the two tests being negative in 11 positive cases, and positive in one case, which was clinically not typhoid (*otitis media*).

The two tests disagreed 33 times, and here the serum test and the final clinical diagnosis agreed 20 times, while the diazo reaction proved clinically correct 13 times.

In the remaining cases the serum reaction was doubtful.

In the majority of the above cases the tests were done only on the admission of the patient into the hospital, and to this is due the fact that the serum reaction does not appear to give such good results as those usually published.

Diphtheria.—Cultivations were examined for diphtheria bacilli 335 times, 71 being from patients in the diphtheria ward (Luke) and 264 from other wards, casualty department, etc. In 121 cases bacilli having the characteristic appearance microscopically were found, and in 214 a negative result was obtained.

Other cultivations were examined 54 times, these including *B. typhosus* in urine and in cases of periostitis following typhoid fever, the *diplobacillus* of *Morax* in chronic granular

conjunctivitis, the *B. coli* in pleuritic fluid, *Streptococcus pyogenes* in the blood, etc.

Blood.—319 examinations of blood were made in all. These included red-cell counts, haemoglobin estimations with Oliver's haemoglobinometer, white-cell counts, cover-glass preparations, spectroscopic examinations, and examinations for malaria organisms and for filaria embryos.

Sputum.—Sputa were examined 33 times; of these, 30 specimens were suspected of containing tubercle bacilli, 8 being sent from the surgical side, and 22 from the medical.

Urines.—The examinations of urines, which numbered 89 in all, were for casts, for the presence of lead, for typhoid bacilli, for tubercle bacilli, etc. The latter were looked for 23 times, with a positive result in 3 cases only.

Water, sponges, dressings, etc., used in the operating theatres. The water sterilised by filtration (Berkefeld filters) was examined 70 times, and was found to be contaminated 5 times out of 36 in the male, and 9 times out of 34 in the female theatre. The sterilised sponges and towels gave a growth of micro-organisms twice in 21 examinations.

Other investigations included examinations of vomits, pus, calculi, animal parasites, etc.

R E P O R T
OF THE
X R A Y D E P A R T M E N T, 1899.

By A. BARRY BLACKER, M.D., B.S.,
SUPERINTENDENT OF THE DEPARTMENT.

DURING the year 1899 the number of examinations made in the X ray department amounted to 711; of these 556 came from the Surgical and 125 from the Medical departments of the hospital. The remaining 30 were investigations in development.

The number of fractures investigated was 110, of dislocations 26, of foreign bodies 221, of surgical diseases 122, and of various surgical cases in which doubt existed as to the nature of the damage sustained 77.

The foreign bodies exhibited great variety, and included 4 farthings, 7 halfpennies, 1 penny, 2 shillings, 1 fishhook, 1 hair-pin, 1 key, 1 piece of bone in oesophagus, 1 slate pencil in bronchus, 1 screw, 1 rivet, 1 intubation tube accidentally swallowed, and the usual assortment of needles, pins, pieces of glass, and bullets.

Amongst the surgical cases, 10 were for the examination of growths in connection with bone, 4 of vesical calculus,

4 of spinal caries, while the remainder were chiefly of deformities, tubercular disease of joints, etc.

Of the medical cases, 28 were examinations for thoracic aneurysm, 4 for abdominal aneurysm, 16 for renal calculus, 5 for morbus cordis, 8 for bronchiectasis, 1 for transposition of viscera, 1 for abscess of liver, 1 for gangrene of lung, 1 for mediastinal growth, 1 for achondroplasia, and 1 for osteo-malacia.

The following is a regional classification of the different examinations :

	Upper Extremity.		Lower Extremity.		Head and trunk.
For foreign bodies .	106	...	57	...	58
Fractures (including separation of epiphyses) . . .	65	...	44	...	1
Dislocations . . .	14	...	11	...	1
Surgical diseases . . .	31	...	64	...	27
Surgical injuries (not included under above) .	44	...	24	...	9
Medical cases . . . . .	.	...	.	...	125

The X rays were employed therapeutically in several cases, but these were not sufficiently numerous for any expression of opinion as to the amount of benefit derived by the patients.

In one case of scrofuloderma affecting the back of the hand an erythematous condition, with subsequent destruction of the superficial layers of the skin, was produced after six exposures of ten minutes duration at a distance of five inches from the anti-cathode. The tube used was one with a high vacuum, equivalent to a spark of eight to nine inches in air ; when the inflammatory condition produced by the rays had subsided the hand had much improved, and the pain from which the patient had been suffering for many months was relieved.

During the year no case of dermatitis unintentionally excited has to be recorded.

Of the 8 examinations of the thorax in patients suffering

from bronchiectasis, it was interesting to note that in 5 abnormal shadows were detected situated in the lung. These were of different sizes and shapes, and occupied different positions ; their nature remains undetermined.

For the statistical figures of this Report I am indebted to Mr. G. A. Carter.

SOME RECENT WORK

ON

LYMPH FORMATION AND CEDEMA.

BY ALFRED W. SIKES, M.D., B.Sc., M.R.C.P.LOND., F.R.C.S.
MEDICAL REGISTRAR TO ST. THOMAS'S HOSPITAL.

BEFORE discussing recent work, it may be well to give a short account of the older work on this subject. The two theories of lymph formation which have given rise to so much controversy are—

- A. The mechanical theory.
- B. The secretory theory.

The mechanical theory, or “theory of Ludwig,”¹ although in existence before his time, was very much advanced by the work of this physiologist. From his experiments he concluded that lymph formation could be explained by known mechanical and physical laws; that it was due chiefly to blood-pressure, an increase or diminution of which caused a corresponding increase or diminution of the lymph. But he also thought that the changes in the tissue due to metabolic processes taking place in the cells would act on the capillary blood and so affect the flow, and

¹ Ludwig and Noll, ‘Zeitschrift für rat. Med.,’ 1850, BJ. ix, S. 52.

also that changes in the blood composition would alter the lymph-flow even when the pressure remained constant.

This theory has received very strong support from the work of Starling, and his masterly criticism of the work of Heidenhain.

The secretory theory, on the other hand, found its chief exponent in Heidenhain.¹ This experimenter's researches may be arranged for simplicity in two parts. Firstly, experiments by obstructing the blood in the aorta or vena cava, noting the amount of lymph flowing from the thoracic duct before and after the experiment, the blood-pressure being taken at the same time. From observations of this kind he considered that lymph formation was independent of blood-pressure, as when the aorta was occluded the pressure fell almost to zero, but the amount of lymph was not much affected, and that tying the inferior vena cava made the lymph become more concentrated and increased in amount, while he found in this case also the blood-pressure was diminished and the intestines anæmic.

As little or no lymph normally flows from the limbs of an animal at rest, the lymph from the lower extremities may be neglected.

By injecting various substances into the blood he separated out those which increased the flow of lymph and divided them into two classes, now generally known as the first and second classes of lymphagogues.

A. *The first class of lymphagogues*, exemplified by "peptone," crab extract, etc. These substances usually gave rise to more lymph, and there was more concentration than before the experiment.

B. *The second class* comprised substances of simpler composition, as sugar, salt solution, etc. Here the lymph produced was greater in quantity, but more watery; the blood-pressure was usually not markedly affected at the time. He found, moreover, that some time after injection the lymph from the thoracic duct contained more of the injected substance than the blood did at the same time.

From these results Heidenhain came to the conclusion

¹ 'Arch. für d. ges. Physiol.,' Bonn, 1891, Bd. lxix, S. 209.

that lymph is a definite secretion from the capillary wall, that the secretory power of the capillary wall determined what should or should not leave the capillaries and enter the tissue spaces, and eventually the lymph channels. However, it was admitted that in certain conditions where, perhaps, the capillary wall was diseased, due to poisons circulating in the blood, that then an increase of pressure might cause an increased formation of lymph. Such conditions are exemplified by renal disease and cardiac backward pressure.

With regard to the first part of Heidenhain's work, Starling¹ and Bayliss and Starling² have repeated his experiments, and have shown that he entirely neglected the influence of the capillary pressure in the liver; that, to put it briefly, when the aorta or inferior vena cava was obstructed, in each case they consider the rise in pressure in the liver capillaries was sufficient to account for the increase of lymph.

Experimenting with the second class of lymphagogues Starling considered that a rise of pressure caused by the quantity of extra fluid was sufficient to account for the increased lymph production, as by first bleeding the animal to the same amount as that of the volume of the injection it was possible to get no alteration of blood-pressure and no increase of lymph. When, however, more concentrated solutions were injected, fluid was drawn in osmotically from the tissue spaces, and a condition of hydraemic plethora was caused, which in its turn was associated with increased blood-pressure, and this caused the increase of lymph in the thoracic duct. The observation that the lymph at a certain time after the injection contains a more concentrated solution of the salt than the blood itself has been confirmed by several observers, and has been thought to be due to the slowness of the stream, so that what is being collected from the thoracic duct represents what has escaped from the capillaries some time before.³

¹ Starling, 'Journal of Physiology,' Camb. and Lond., vol. xvi, p. 224; vol. xvii, p. 30.

² Bayliss and Starling, 'Journal of Physiology,' vol. xvi, p. 159.

³ Cohnstein, 'Archives f. d. ges. Physiol.,' Bonn, Bd. lix, S. 350.

There are many difficulties in accounting for the action of the first class of lymphagogues. Starling accounts for this action by considering them as poisons to the capillary wall, acting chiefly on the lower capillaries, and so altering their permeability as to allow lymph greater in amount and containing more solid matter to pass through. He therefore thinks that the results of experiments done so far can quite well enough be explained by mechanical causes, viz. capillary blood-pressure, and variations in permeability of the capillary wall, without bringing in any vital or secretory hypothesis.

The action of the first class of lymphagogues seems to me to be the chief difficulty, but recent work has thrown some fresh light on this part of the subject, and has brought us back to a part of Ludwig's original theory, viz. the part the tissue cells play in the production of lymph.

As the tissue cells include all the extra-capillary cells in the body, one has a huge volume of living substance continually altering chemically, which must have a considerable part to play in the formation of lymph, and alteration in these cells must have a great deal to do with the production of oedema.

A great deal of work has been done by Asher¹ and those who have worked with him, and a short account of their results may be of interest.

Asher confirms the observation that the blood-vessels normally absorb a part of the tissue products. By a series of experiments where lymph was collected from different parts of the body—for example, that flowing down from the neck—and then injected into the circulation, and the effect on blood-pressure, etc., noted, he considers that lymph is of a toxic nature; he also finds that the amount flowing from an organ is conditioned by the work of the organ alone, increased thyroid secretion causing more lymph to leave the gland, and what is perhaps a better example, that

¹ Asher and Barbéra, 'Z. f. Biologie,' München und Leipzig, 1898, Bd. xxxvi, S. 154. Asher, 'Untersuchungen über die Eigenschaften und die Entstehung der Lymphe,' 1899, Bd. xxxvii, S. 261. Asher, 'Z. für Biologie,' 1900, Bd. xl, S. 180.

increased salivary secretion also is accompanied by the production of more lymph flowing away from the gland, the lymph not being dependent on the pressure or amount of the blood but simply on the activity of the cells of the gland. He found that a diet caused the more nitrogenous substance in the thoracic duct the more pure in albuminous substance it was, and so may be supposed to give rise to more cell metabolism.

The first class of lymphagogues is again experimented with. It is known that bile in the circulation will cause an increased flow of bile from the liver. Asher found it at the same time caused an increase of the flow of lymph from the thoracic duct, and also considers that peptone acts in the same way, by acting on the cells of the liver. The substances above quoted are given as examples of substances which are known to increase cell activity by the increase of bile formed, and at the same time he finds they increase the amount of lymph.

So the above work seems to strengthen the idea that lymph formation is really as much dependent on the tissue cells as on anything else, and it appears probable that some of the results explained by Heidenhain as due to secretory action of the capillary wall, and by Starling as due to alterations in capillary blood-pressure and permeability of the capillary wall, may both be explained by increased tissue-cell activity, chiefly in the liver. That many investigators, including Starling, were quite alive to a part probably played by the tissue cells is clear from their writings. Asher has, however, given us valuable experimental evidence of their significance.

Asher is also of opinion that the more concentrated lymph which occurs after injecting one of the second class of lymphagogues may be partly due to increased tissue activity, as it is difficult to explain satisfactorily from a mechanical point of view.

It was found that choline caused no increase in the bile and a lymph which was weaker than it was before the injection, while injection of a crystalloid (belonging to second class of lymphagogues) at the same time as the choline often had no effect, or perhaps only a slight diminu-

tion in concentration of the lymph; so the crystalloid is inhibited in its action by choline, which probably works by inhibiting cell activity.

Again, if the crystalloid acts physically one would expect that when injected into the circulation it would cause at first a slight fall in amount of lymph, due to the salt in the blood drawing up fluid osmotically from the tissues; this has, however, only been found in about a third of the cases investigated by L. Barlow. Asher, however, admits that one must bring in the influence of pressure with regard to the crystalloids of the second class of lymphagogues, and he finds that quinine, which limits the metabolic change in the body, stops the action of the first class, which may act on the tissue cells, while it has little or no influence on the second class; hence he writes about a physiological and a physical component in the production of lymph.

Another experiment on the connection is also important. Arsenic has been described as a "capillary poison." Injected alone it produces an increase of lymph, although not so great as that caused by crab extract, but after this injection the crystalloids produce their usual effect, so the capillary wall is not affected apparently, but the changes perhaps take place in the tissue cells, thus leading to the increased lymph production. It was also found that a lymph-flow could be obtained some hours after the animal had died, so this must have been due to changes taking place in the tissues, as the blood-pressure was *nil*.

In a paper just published by Asher¹ (October, 1900), he reports some more experiments of the kind quoted above. He finds that ammonia salts at the same time that they become converted into urea to the liver cause an increased flow of lymph, which contains more albuminous substance than normal. Albuminous substances made to pass through the liver have the same effect, while glycogen causes more lymph, but the amount of nitrogenous substance in it is not altered. Pancreatic activity is also associated with increase of lymph, and he concludes with the words—

¹ L. Asher and F. W. Busch, "Untersuchungen über die Eigenschaften und die Entstehung der Lymphe (Vierte Mittheilung)," 'Z. f. Biologie,' Bd. xl, p. 333.

“Wir begnügen uns, als einzige Gesicherte die Thatssache hinzunehmen, dass die Lymphe ein Product der Arbeit der Organe sei.” So that, as a result of the above work, we may add to the conclusion stated above, that—

A. When the aorta or inferior cava are obstructed, the change in the lymph may be due to tissue-cell change as well as the increased capillary pressure; and in explaining the action of the second class of lymphagogues, the tissue cells must also be considered.

B. The first class of lymphagogues act not on the capillary wall, but on the tissue cells.

Magnus¹ found that no oedema resulted in an animal from simple hydraëmia unless some poison, as arsenic, be present in the circulation, or until the kidneys had been excised, or after the death of the animal; and considered the poison acted in the capillary wall; but it can also be explained by the poison acting on the tissue cells.

The bearing of this recent work on oedema is to confirm the supposition that the tissue cell is a cause of the increased serous exudation, and that it is due to metabolic products differing from the normal ones, and drawing out osmotically more fluid from the impoverished blood, perhaps in order that the cells may obtain their proper amount of nutriment; but I think the most difficult part is to explain why this fluid does not flow away again, either by the veins or lymphatics. It is thought probable that the venous capillaries cannot take up any proteid matter, and therefore it is necessary to have a lymphatic system to convey it away. Starling thinks that the proteid in the blood has a great deal to do with the osmotic absorption of fluid and salts from the tissue spaces. So when the blood is poor in proteid substances one would not expect it to act so well in this respect, and the abnormal katabolic products in the cell may more or less neutralise the power of the proteids in the blood. Is it possible, after all, that the exudation itself may cause the smaller passages leading off from the tissue spaces to become occluded, as, for example, in cardiac

¹ Magnus, “Ueber die Entstehung der Hautödeme bei experimenteller hydramischer Plethora,” ‘Arch. f. exper. Pathol. u. Pharmakol.’ Leipzig, 1899, Bd. xlii, S. 250.

œdema, or in renal œdema? or is it possible that the lymphatics are diseased as well as the blood-vessels?

I think the special importance of recent work is to show us that in considering lymph formation and œdema, one has to go back to cellular physiology and pathology, and that here, as in so many other branches of physiology, we want to know more about the normal processes in the cell itself.

ACUTE TRANSIENT ATAXY,

WITH

LOSS OF SENSE OF POSITION AND TETANY AS SEQUELS OF DIPHTHERIA.

By CHARLES R. BOX, M.D., B.Sc.LOND., M.R.C.P.,
ASSISTANT PHYSICIAN TO ST. THOMAS'S HOSPITAL AND TO THE LONDON
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H. E. H—, a house physician, whilst feeling somewhat out of health, assisted at three consecutive tracheotomies for diphtheria within a space of thirty-six hours. During one operation a quantity of fluid from the trachea was ejected into his face. This fluid was immediately washed off.

On the morning of the next day but one he awoke with a splitting headache, and on getting out of bed had a severe shivering fit. At midday he went off duty feeling ill and feverish. His throat was injected, but there was no follicular secretion and no membrane visible. After passing a very uncomfortable night, his rest being disturbed by epigastric pain and a sense of suffocation, he was warded. The temperature was now found to be 103·2° F., and the fauces were much injected. A culture was taken as a matter of routine. During the succeeding night a nasal

discharge appeared, and soon after a small piece of membrane was expelled from the nose.

On the morning of the third day of illness Dr. Jenner, the Superintendent of the Clinical Laboratory, reported that diphtheria bacilli of the long variety were present in the culture which had been taken from the throat. Seven thousand units of diphtheria antitoxin were now injected, and the patient declared that he experienced an immediate sensation of relief with cessation of his headache. The nose and throat were irrigated with a free chlorine mixture. The temperature on the evening of this day was 103° F., but fell two or three degrees next morning. At the patient's request an additional 7000 units were injected on the fourth day of illness. A similar sensation of relief followed this second injection. On this day for the first time a small patch of membrane appeared on the tonsil. The fauces were almost closed by œdematosus swelling, and the submaxillary glands were greatly enlarged.

Sleeplessness was now a great trouble. This was combated by stimulants and chloralamide in full doses. About this time a complete cast of the turbinal bone was expelled from each nostril.

Improvement now commenced. The temperature became normal and the throat rapidly assumed a healthy appearance. The pulse rate, which had been moderately accelerated during the fever, became normal. A trace of albumen which had been present in the urine during the febrile disturbance disappeared.

Thirteen days after the first onset of symptoms the patient experienced a feeling of oppression in his chest and some precordial pain. The same evening the pain increased and radiated from the chest into both arms. Tingling of the fingers and dyspnoea ensued, and finally the pain extended to the legs. The fingers were now found to be clenched into the palms, the wrists fully flexed, and the arms powerfully pronated. The legs were extended and the feet in a position of extreme plantar flexion, with flexion of the toes. The back was slightly arched, but the jaws were not affected. The patient spoke with difficulty, and complained of extreme pain across the wrist and ankle

joints and in the chest. He attributed his condition to an acid strychnine mixture which he was at the time taking. This mixture contained only three minimæ of liquor strychninæ hydrochlor. to the ounce. He was reassured, and the strychnine mixture was replaced by one containing bromide of potassium.

After some time the spasm gradually passed off, but recurred again in less degree the following night. Slight spasms of similar nature recurred in the arms for many weeks during convalescence.

Two days before the attack of tetany the first antitoxin rash made its appearance. It manifested itself as a scarlatiniform rash radiating from the syringe punctures in the flanks and axillæ. The rash rapidly became urticarial, and in a few days the patient was involved from head to foot. The wheals were very large and the irritation most intense. At first, sponging with a solution of carbonate of soda was used to allay the irritation, but the soda bath adopted later was much more efficacious. The rash was accompanied by slight fever, joint pains, principally in the shoulders, and vomiting. The vomiting lasted for three days, and gave rise to some uneasiness, but there was never any indication of pulse failure.

After six days the rash disappeared, but returned again twenty-four hours later. This time the irritation was again great, but the joint pains were less, and the condition less persistent.

The first paralytic symptoms were noticed about three weeks after the onset of the diphtheria. The symptoms were slight regurgitation of fluids through the nose, nasal intonation, and tingling of the tongue and finger tips. The regurgitation lasted a month and then completely disappeared. At the time of its disappearance the legs were weak, there was cough on swallowing fluids, and diplopia for distant objects. Accommodation paralysis was never detected.

The patient at this time was allowed to sit in a large chair, but took to bed again on the sixty-first day. His condition was then as follows:

The legs were weak and hyperæsthetic. The tenderness

was so great that it was impossible for him to sit with his legs crossed. The external popliteal nerve-trunks were tender. The knee-jerks were obtained with ease. The fingers were partly anaesthetic, and power in the arms deficient. The right external rectus was deficient in its action, but accommodation appeared perfect. The diaphragm and intercostal muscles were acting well, and no ataxy had yet been noticed.

Ataxic symptoms were first definitely noticed on the seventy-third day, although they may have been present for a few days previously. The patient could not stand, and in attempting to walk reeled in all directions. The movements of the arms were inco-ordinate and appeared almost choreic. On attempting to brush his hair the patient threw the hairbrush out of the window. In trying to feed himself he narrowly escaped injuring his eyeball with the fork. He with very great difficulty buttoned his clothes with a large button-hook. The sense of position appeared quite absent; he never knew where his arms and legs were. The fingers and hands were partly anaesthetic, and there were troublesome subjective sensations in the arms and feet. The soles were intensely hyperaesthetic. The knee-jerks could still be obtained, but with some difficulty. The ataxy reduced the patient to a condition of extreme helplessness. He could neither feed himself, nor wash, nor hold a newspaper. In the dark he was helpless and on one occasion fell out of bed. The actual muscular weakness was inconsiderable, and his erratic movements were very forcible.

It was fully three weeks before there was any amelioration in his condition, but improvement was then rapid and continuous. For some time it was quite painful for him to stand on a carpet, the sensation being that of standing on tin tacks. The knee-jerks were absent for the first time at this period. There was at no time any marked wasting of the leg muscles.

The patient is now (three years later) in good health and shows no sign of nervous disease.

There are at least three points of very great interest in this case. The first and most important is the occurrence

of such well-marked and transitory ataxy as a sequel of undoubted diphtheria. The second is the complete loss of sense of position of the limbs which accompanied the ataxy. The third is the development of tetany during the course of the disease.

Authorities are beginning to recognise that ataxic conditions may occur as sequels of diphtheria, just as they do after other diseases of infective or toxic nature in which peripheral neuritis is present. When slight degrees of motor paralysis are present it is often exceedingly difficult to determine whether irregularity of movement is merely due to the muscular weakness or is due to an additional sensory factor of true inco-ordination. When the inco-ordination is very marked, as in the case now reported, discrimination is easy. Owing to the slight degree of inco-ordination present in many of the cases hitherto reported, and owing to the co-existence of paralysis, sometimes slight and sometimes severe, good observers have not all felt justified in recognising the possibility of the occurrence of true ataxic sequels in diphtheria.

It is quite possible, however, that true inco-ordination of movement is more common in diphtheria than is commonly suspected.

I think that most observers who have had the opportunity of regularly watching cases of diphtheria will agree with me when I say that it is no very unusual thing to see a decided staggering, and at times almost reeling gait in children recovering from the disease in question. I have often been struck by this manner of walking, even in cases where the paralysis has been trivial, and until my attention was more particularly directed to it by the case reported above, was satisfied with the ordinary vague explanation that it was due to "weakness of the legs." I know from personal observation that unsteadiness exists much more frequently than is shown by hospital notes, as attention is not usually particularly directed to this point. Whilst reading literature on the subject of diphtheria recently, I have been struck by the frequency with which the gait is referred to as "unsteady," "reeling," and even "cerebellar." As a rule the author's attention is focussed on some other point, and no

further reference is made to the particular disorder of movement.

A definite statement on the subject will, however, be found in Dr. H. W. G. Mackenzie's paper "On Diphtheritic Paralysis and the Nervous Symptoms and Sequels of Diphtheria" in the 'St. Thomas's Hospital Reports' for 1893, vol. xxi. Dr. Mackenzie there writes as follows :

" Such symptoms as staggering, stumbling, giving way of the legs, etc., were noticed in thirty-three cases (out of 955). Sometimes the staggering was so great as to suggest the existence of cerebellar disease. I have seen at least one case, which from its subsequent history I have no doubt was one of diphtheritic paralysis, at first diagnosed as cerebellar tumour. It was no uncommon story to hear from the parents that the children about the sixth or eighth week became tottery on their legs, and that they frequently fell and consequently bruised themselves. This occurred in many cases in which no actual loss of power was manifest. Sometimes it preceded the latter. The knee-jerks generally disappeared in such cases at a later period. As a rule this inco-ordination trouble lasted only a few weeks."

Dr. Mackenzie appends a table showing that the majority of cases occurred in the fifth, sixth, seventh, eighth, and ninth weeks.

I have taken the liberty of quoting this paragraph *in extenso*, because the observations there reported appear of the greatest clinical interest and importance.

Thirty years ago Professor Grainger Stewart recorded a case of ataxy which occurred as a sequel to diphtheria. Since that attention has been drawn to similar cases by at least ten other writers. It is impossible to be absolutely certain that in all the cases recorded the antecedent disease was diphtheria, but in most there seems no reason to doubt the connection, and in the remainder the presumptive evidence is fairly strong.

Sir William Gowers points out that inco-ordination may be marked in diphtheria when there is little or no loss of power, and that it may occur independently of any affection of sensation. He also draws attention to the possibility of mistaking the disease for locomotor ataxy, especially when

anæsthesia and loss of knee-jerks co-exist with the inco-ordination.

In a short summary of the distinctive features of diphtheritic paralysis, Dr. Judson Bury ('Allbutt's System of Medicine,' vol. vi) states that there is a greater tendency to inco-ordination than in cases of neuritis from other causes.

Most of the cases reported bear a strong family likeness. The inco-ordination declared itself some weeks after the presumed infection, was accompanied by motor paralysis, which was sometimes slight, sometimes severe. Sensory affections of slight degree were present in the limbs, and sooner or later the knee-jerks were lost. Further, and this is of the greatest importance, after a duration of some weeks the ataxy diminished, and finally the patient returned to a normal condition.

The course of the disease is thus similar to that which obtains in those cases of post-influenzal and of alcoholic neuritis in which ataxy is manifest.

The association of the ataxy with such complete loss of the sense of position is a very important and suggestive factor in the case now recorded. I had never before met with such complete inability to appreciate the position of the limbs. The loss, in the limbs at any rate, appeared almost absolute, and led to the most ridiculous occurrences. Of the published cases to which I have access I can only find mention of such loss in two, and in one of these it is simply mentioned that the patient was unable to appreciate the position of his fingers; in other respects his sense of position appears to have been perfect.

The third point to be noticed in connection with the case is the occurrence of the transient attacks of muscular spasm, which I think it quite justifiable to designate tetany. Tetany cannot be a very common complication of diphtheria. In over 700 cases of diphtheria which I have had the opportunity of observing for practically the whole period of the disease, only three cases of tetany have occurred. In one of the three, a female aged twenty-three years, it was impossible to definitely exclude a neurotic element. The second patient was a child. In the third case, which is the one recorded

in this paper, the spasms were far more severe than in the other two. Unfortunately the electrical reactions were not investigated, so I am unable to say whether the characteristic anodal opening tetanus of tetany was present. It was not possible on the day following the first attack to induce the spasm by compression of the arm, and increased mechanical irritability of the facial nerve did not appear to be present. I cannot find any reference to tetany in Dr. Mackenzie's series of cases mentioned above.

What was the probable site of the lesion which produced the combination of symptoms here recorded? Is it possible to explain the case by the lesions which all authorities agree are the common result of diphtheritic poison, *i.e.* degenerative processes in the peripheral nerves, or is it necessary to postulate some further involvement of the central nervous system?

When a region of the body is totally deprived of sensation by section of its afferent nerves, a condition results which has been named "apæsthesia." The manifest effects of this condition are three:

(1) Paralysis; (2) ataxia; (3) atonia.

The occurrence of paralysis of movement as the result of section of an afferent nerve appears at first sight paradoxical. The following communication, which I received from Prof. Sherrington, explains what is meant:—"The paralysis resulting from the annihilation of sensation in the upper limb is paralysis of skilled movements of the hand. The hand cannot *grasp* an object. It is possible that in order to will the muscles used in these skilled movements sensations must be arising from them. The fact remains, that the monkey's hand and foot, the horse's lips, etc., cannot, when deprived of sensation (deep and superficial), execute prehensile movements."

The ataxy thus produced appears from the published accounts to be very similar to the disorder of motion observed in this case. Prof. Sherrington says, "I have seen the apæsthetic fore-limb of a cat, when raised to assist the mouth in the management of a large morsel, often miss the cat's mouth, or even its head altogether."

Atonia, or excessive passive mobility of the limb, is another result of the blocking of all afferent channels. Although atonia was not looked for in this particular case, yet I have seen very marked atonia in a patient ataxic from peripheral neuritis of unknown origin. The patient in question made a perfectly good recovery, although the first diagnosis was "locomotor ataxy."

Now Sir W. Gowers states that "wild irregularity of movement" (and such was present in the case now under consideration) may result from interruption of the afferent path from the muscles to the spinal cord, including the fibres which ascend the cord and those which subserve the muscle reflex processes at the level of entrance. The effect of the loss of the latter processes is a loss of the chief factor of spinal co-ordination. Hence this variety of inco-ordination should be associated with loss of knee-jerk. It is true that in my case the knee-jerks did finally disappear, yet at the time when the greatest inco-ordination was manifest the knee-jerks could be obtained, although with some little difficulty. At the time of the final disappearance of the knee-jerks the inco-ordination of movement had very greatly diminished. Precisely the same sequence of events occurred in a case recorded by Dr. Buzzard in his Harveian lectures on peripheral neuritis.

As the case appeared peculiar both in respect of the long retention of the knee-jerks, and also in the loss of sense of position which was so marked, I sought the aid of Prof. Sherrington, who was good enough to write as follows :

"The sense of position seems to depend on impulses gathered up from sensory nerves, from the joints, the bones, and the muscles ; hardly at all from the skin. A lesion of the peripheral nerves would, no doubt, have to be very widely distributed in order to cause complete loss of the sense of position. If irritative lesions of the sensory nerves were going on pretty widely—and your note says 'many painful subjective sensations in the limbs,'—might not illusions regarding the position of the limbs have been initiated ? Such, of course, would explain wild and wrong answers to tests of position, and would also account for the

'most marked ataxy' recorded in your note. That the knee-jerk should have been present shows that the afferent fibres in the vasto-crureus muscle cannot all have been destroyed."

This suggestion of Prof. Sherrington's of an "irritative lesion of peripheral nerves" appears to admirably account for the symptoms observed. Further, it is corroborated by the presence of indications of a similar affection of the motor apparatus; I mean the tetaniform spasms. It is true that the site of the lesion which causes tetany is obscure, but the present tendency is in favour of a toxic affection of the motor neurons of the spinal cord. Dr. Judson Bury quotes a case of alcoholic peripheral neuritis in which interosseal spasm was a marked feature.

It appears very probable that the site of the lesion which causes the ataxy in diphtheria is identical with that which causes the inco-ordination in some cases of alcoholic and of post-influenzal neuritis. It is significant that in the first two mentioned diseases, and probably also in the third, a parenchymatous neuritis may be present, and that cord changes are exceptional, or at all events usually limited to slight changes in the anterior cornual cells.

Further, as shown above, there appears but little difficulty in explaining the symptoms on the hypothesis of a purely peripheral lesion. So, in the absence of more definite information derived from actual examination of the nervous system in such a case as the one under consideration, it appears justifiable to assume that irritation or paralysis of peripheral *afferent* nerves accounts for the unusual symptoms present.

I have not thought it necessary to discuss the possible influence of antitoxin in producing or aggravating the nervous symptoms, for two reasons. Firstly, the ataxic sequels of diphtheria were described before antitoxin was introduced for the treatment of the disease. Secondly, experimental evidence strongly supports the conclusion that antitoxin actually diminishes both the tendency to paralysis and its degree, instead of aggravating the paralysis, as is sometimes alleged.

Conclusions.

1. There is definite evidence of the occasional occurrence of marked inco-ordination of voluntary movement as a sequel of diphtheria, and it is probable that minor degrees of the same disorder of movement are more commonly associated with diphtheria than is usually recognised.

2. The inco-ordination is transitory, but, unless particular attention be paid to the previous history, may give rise to an erroneous diagnosis of locomotor ataxy when it occurs in the adult, or of cerebellar tumour when it occurs in the child.

3. The inco-ordination may be accompanied by painful subjective sensations and associated with loss of the sense of position of the limbs. It is not necessarily associated with cutaneous anaesthesia.

4. It appears unnecessary to postulate any further lesion to account for these symptoms, than a neuritis of *afferent* nerves, such as is already amply proved to exist as a sequel of diphtheria; or a lesion of the peripheral terminations of *afferent* nerves.

I wish to express my great indebtedness to Professor Sherrington for his valuable suggestions and advice. I am also indebted to Dr. H. E. Hewitt for much help in preparing the notes of the case.

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CERTAIN LESIONS OF THE BRACHIAL PLEXUS AND THEIR CAUSATION.¹

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THE affections with which this paper deals will appear at first sight to be a somewhat heterogeneous collection, and, if they are regarded purely from the clinical standpoint, not without justification. If, however, the method of their production, their pathogeny, be taken into account, it will at once become evident that they are closely allied, and, even from that point of view, identical. Unfortunately I cannot pretend to add anything to the sum of knowledge even in this corner of science, but I may be able to call your attention to facts which are not commonly recognised, though they are of some practical importance.

The first illustrative case which I will bring to your notice is the following :

J. G—, æt. 55, on December 31st attended a “Bohemian concert,” when he had a fainting fit. He is sure that he was not under the influence of alcohol. He was taken out, put in a cab, and taken home. He became conscious while in the cab, but noticed nothing wrong with his arm.

¹ A paper read at St. Thomas's Hospital before the South London District of the Metropolitan Counties Branch of the British Medical Association, November 29th, 1903.

He reached home, where his wife, with some difficulty and the help of some friends, assisted him upstairs. In doing this a friend pulled his left arm up over his head, when the patient at once called out, "You have hurt my arm." The left arm immediately became paralysed. For the first four days the patient could not move even a finger, but since then he has improved considerably. At the present moment (January 28th) he can flex all the fingers and the thumb feebly, but no movement at either shoulder, elbow, or wrist is possible.

On examination the slight movements just described are the only ones of which the left upper extremity is capable ; they are limited to the small intrinsic muscles of the hand and the long flexors in the forearm. The paralysed muscles include not only those which belong entirely to the limb, but also those which connect the shoulder-girdle with the trunk, such as the serratus magnus, and the pectorals. Both supra and infra spinatus are also affected. All the muscles react to a Faradic current, but their irritability is reduced far below the normal. To the voltaic current irritability is fully up to the normal, but the contraction is sluggish, and A.C.C. is greater than K.C.C., the changes corresponding to a partial reaction of degeneration. There is no defect of sensation either objective or subjective. The affected muscles are flabby and slightly wasted ; the pupils are equal and active ; and in every other respect the patient is a perfectly healthy man.

This is a complete lesion of the brachial plexus, clearly produced by elevation of the arm over the head, combined with some amount of traction. The case which follows is precisely similar in the distribution of the paralysis. The cause is to be found in elevation of the arm over the head, but without the element of traction found in the preceding case. It is, in fact, an example of what is known as post-anæsthetic palsy, and was reported by me in a paper which I read some years ago before the Society of Anæsthetists. The patient was a single lady æt. 38. There is nothing of importance in her previous history, save that at the age of six she suffered from some affection of the left elbow, which left that joint in a partially ankylosed condition. I mention

this because this is the limb which was subsequently affected by paralysis. She was admitted to St. Thomas's Hospital on account of pelvic symptoms, and on October 26th an operation was performed, which lasted two hours. As soon as the patient recovered from the anaesthetic she noticed that the left arm was powerless, and was causing her a good deal of pain. I was asked to see her a few days later, and found the condition as follows. The left arm lay motionless on the bed. To the patient's most strenuous efforts to move the limb the only response consisted in very slight flexion of the fingers. Motor power about the shoulder was completely lost, except as regards shrugging movements. There was no ascertainable loss of sensation, and the only sensory change noticed by the patient consisted in some transient paraesthesia about the tips of the fingers. Neither nerve-trunks nor muscles were tender on pressure. There were no pupillary symptoms, and no signs of nerve disease elsewhere. When the patient was discharged some six weeks later there was some recovery as regards the forearm and fingers, but none as regards the upper arm and shoulder. Six months later I heard from her to the following effect. "I am pleased to say that my arm is very much better, although not, as you surmise, quite recovered. My greatest difficulty is in lifting things up; for instance, I can carry a teapot or a jug of water easily by keeping it down by my side, but were I to attempt carrying it upstairs and raised upwards I should fail. The weakness seems to be centred in the shoulder down to the elbow; after that I have the full use of my arm, hand, and fingers." You will note that not only the extent of the paralysis, but the order of recovery is precisely the same in these two cases. The hand muscles recover before those of the forearm, and those of the forearm before those which act on the shoulder.

As might be expected in this class of post-anaesthetic paralyses, the evidence as to causation is very commonly indirect. Not infrequently the loss of power escapes notice for days, and sometimes weeks, if the operation has been a severe one, and when attention is drawn to it the time has gone by for ascertaining the details of the patient's position while under the anaesthetic. In a fair number, however, the

elevation of the arms has been proved. In one such case the paralysis was complete, affected both arms, and lasted till the patient's death some weeks later. In the absence of this direct evidence the following points appear to be fairly convincing. In the first place it is clearly proved that the supposed cause is able to produce the result, and is practically the only one possible under the given conditions. Hysterical paralysis may, it is true, closely simulate the condition, but it may easily be excluded by an electrical examination of the muscles. In the second place, the paralysis has almost without exception followed operations on the chest and abdomen, where the raising of the patient's arms is practically a necessity to get them out of the way of the surgeon. In the third and last place, the order of recovery of the various muscles is so characteristic as to be almost pathognomonic. It is well illustrated in the two cases mentioned above.

Enough has now been said to give an idea of the general clinical type of these affections. Now let us pass for a time to the consideration of the mechanical conditions by which they are produced.

On this point you will get very little information from your text-books. Taking Clifford Allbutt's 'System' as the best of these, the paragraph which deals with paralysis of the brachial plexus makes no reference to the possibility of such occurrences as those which I have just described. Under the heading of Erb's paralysis the writer speaks of this sub-group as follows :—"Generally injuries produce this form of paralysis. Not infrequently it is caused by pressure above the clavicle, close to the side of the neck ; thus mason's labourers and porters supply many of the instances of this somewhat rare type of paralysis. When the arm is raised above the shoulder and carried backwards, or when from the weight carried the head is twisted round backwards to the same or to the opposite side, the fifth and sixth cervical nerves are more liable to be compressed." The wording here is not quite clear, but apparently the compression of the nerves is considered only in connection with the carrying of weights on the shoulders, and importance is attached to the position of the arm only in so far as it

renders the nerves more accessible to this external pressure. The pressure, on the other hand, of which I am speaking is produced by approximation of the clavicle to the first rib, with crushing of the cords of the brachial plexus between the two.

It would be superfluous to describe at length all the anatomical relationships between the first rib, clavicle, and brachial plexus, but it is necessary to refer to them in brief outline.

First, with regard to the relative positions of rib and clavicle, I wish only to remind you that whereas at their anterior extremities the one lies immediately beneath the other, the relationship of the rib with the outer half of the clavicle is considerably altered. Instead of being inferior it may now be described as lying internal to the latter bone, and in part at all events at an actually higher level. In this connection, too, it is important to remember that the posterior cavity of the inner half of the clavicle is in the outer part replaced by a convexity; the inner concavity acts under almost all circumstances as an efficient protection for the vessels, but the nerves lie farther out, and so not infrequently suffer.

It is necessary now to describe at some length the mechanics of active and passive elevation of the arm respectively, but before doing so I must make my acknowledgment to Gaupp's¹ brilliant work on this subject. To the original paper I must refer those who wish to study this subject in greater detail. The views set down in the anatomical description are little more than an abbreviation of the original.

The articulations concerned are the shoulder, the acromio-clavicular, and the sterno-clavicular joints.

The shoulder-joint need be studied only so far as concerns elevation of the arm. Even if the scapula be fixed it is found that elevation of the arm in a forward direction can still be carried out with some freedom to at least a right angle, and perhaps more. But elevation in a pure lateral direction is checked before a right angle is reached by the shortness of the inferior portion of the capsule, and to some

¹ 'Centralblatt für Chirurgie,' Bd. xxi, 1894, S. 793.

extent by the spiral arrangement of its fibres, which does not interfere to any extent with the anterior movement upwards, but at once comes into play in lateral elevation. The movement upwards is also arrested by the projecting acromion process. At the sterno-clavicular joint movement is freely possible about two axes, a vertical, in which the outer end of the clavicle is made to move either inwards and backwards or outwards and forwards, and a sagittal, about which the movement is upwards or downwards. A very slight degree of rotation of the bone on its own longitudinal axis is also possible. Of all the movements at this joint one only need concern us to-day, that by which the outer end of the clavicle travels in a horizontal plane backwards and inwards.

The acromio-clavicular joint is striking on account of the freedom of the movements allowed, a condition which conflicts somewhat with preconceived notions. In a position of rest a line drawn through the articulation perpendicular to the plane of the joint surfaces will run horizontally from behind, and outwards, forwards, and inwards. About this axis the scapula will perform swinging movements of considerable extent in a vertical plane directed forwards and outwards. It is evident that with movements of the outer end of the clavicle in the horizontal plane there must be a corresponding change in the plane of scapular movement just described. If, for example, the end of the clavicle move inwards and backwards, the plane of scapular movement will become directly transverse, and so will be adapted for lateral elevation of the arm, as will be described more fully.

The direction of movement of the scapula in this vertical plane will also be modified by movement of that bone about a vertical axis, also passing, of course, through the acromio-clavicular joint. The effect of this movement will be to widen or narrow the angle between scapula and clavicle. If the angle be widened, as by throwing the vertebral border of the scapula away from the thoracic surface, the result must be to tend to convert the horizontal diagonal axis of scapular movement already described into a transverse one, and to make the actual plane of movement of the scapula antero-posterior instead of being oblique. Its effect will, in

fact, be in a precisely opposite sense to that produced by the clavicular movement described in the preceding paragraph.

We have now to consider by what muscles elevation of the arm at the shoulder is carried out, and particularly in the pure lateral position. Observation on the living body shows that, although so far as the formation of the articulation is concerned the movement of the limb to a point approaching a right angle with the body is possible at the shoulder-joint, yet in practice almost from the commencement a share is taken by one or other, or both, of the clavicular joints, as is shown by the movement of the scapula. This consists in a rotation of the bone, so that when the arm is elevated to the utmost the inferior angle has travelled almost directly outwards to the level of the posterior border of the axilla. At the same time the whole bone has remained in close apposition to the surface of the thorax. Inspection of the front of the chest reveals the fact that in the meanwhile the clavicle has undergone a very noteworthy change of position. Its outer extremity has not been raised, as might have been anticipated, but has moved backwards and inwards in a horizontal plane until the long axis of the bone has an almost antero-posterior position in relation to that of the body. The chief muscles concerned in the combined movement, resulting in lateral elevation of the arm, are the deltoid, which commences it, the trapezius, or rather that part of it the insertion of which extends to the level of the scapular spine, and lastly, the serratus magnus. The deltoid acts on the humerus, the trapezius on the clavicle, and the serratus magnus on the scapula. And now as to the meaning of the movement of the clavicle, which is brought about by the action of the trapezius. It will be remembered that in the state of rest the swinging movement of the scapula which takes place at the acromio-clavicular joint about a horizontal diagonal axis, can only occur in a direction as much forwards as outwards, and will allow of a movement of the arm upwards only when it is combined with a movement forwards. It is the function of the trapezius by its action on the clavicle to eliminate this forward element, and allow of a pure lateral movement. As soon as the trapezius has prepared

the way the serratus commences its action on the scapula, which consists mainly, as above described, in a movement of its lower angle directly outwards into the axilla. The rotation upwards and outwards of the scapulo-humeral articulation, which is the immediate essential condition for lateral elevation of the arm, is thus secured. It may be mentioned that in addition to the main movement of the scapula, there is a subsidiary one about a vertical axis which passes through the acromio-clavicular joint; this secures the constant apposition of the bone to the ribs in spite of the rounded outline of the thorax, but has no general import so far as this discussion is concerned.

Such is the muscular mechanism by which elevation of the arm laterally is brought about. It is clear that in the process the clavicle must be brought into very close proximity to the first rib if it does not actually slide over its surface; but it cannot be asserted with confidence that such a movement, carried out by muscular action, ever results in the pressure on nerve-roots with which this paper deals. Passive movements with or without traction are the effective agents. Now if the arm be elevated laterally above the head, either in the cadaver or passively in the living subject, it is at once evident that the same movements of the clavicle and scapula take place as were observed when the action was performed by the muscles of the subject. To follow the explanation of this fact is quite easy with the assistance of a specimen which includes the clavicle with its two articulations, the scapula, and the upper half of the humerus; all the articulations are intact, but the muscles have been removed. If the humerus be now abducted it will be seen that the first 30° or so of the movement are carried out entirely at the scapulo-humeral articulation. The next stage is performed by the rotation outwards of the lower angle of the scapula as before; this is due mainly to the pull of the lower portion of the capsule of the shoulder-joint. It is preceded by the same movement of the clavicle as before, which is in its turn brought about by the levering action of the head of the humerus against the articular surface of the scapula. The upper part of the scapula is

forced inwards (and with it the clavicle) by the same movement which carries the lower angle outwards. The third and last stage of the movement is entered upon when the coracoid process is brought round by the rotation of the scapula so as to impinge upon the anterior border of the clavicle. Further progress is arrested by the tightening of the claviculo-coracoid ligaments, and if the elevation of the humerus still continues, scapula and humerus move as one bone at the acromio-clavicular joint, first levering the outer end of the clavicle still more backwards and inwards, and finally producing a slight rotation upwards and backwards of the clavicle about its long axis. It can easily be seen how great the force of this movement may be when produced by a lever the length of the arm. Probably it is greater so far as its local effects, as just described, are concerned, than is ever the case with muscular action, and no doubt this is the reason why passive elevation so often gives rise to bad effects, as compared to the active movement. In order to realise the forces involved it is worth while to try the experiment on the cadaver with a finger between rib and clavicle.

It would appear as if this final levering action is, so to speak, the last straw upon the unfortunate nerves. It is particularly unfortunate, too, that the rotation of the clavicle about its long axis has the effect of bringing a specially sharp edge instead of a fairly rounded surface to bear at this critical stage. Whether this takes place at all during muscular movements, even of unwonted energy, is doubtful. For example, the combination of elevation of the arm with traction is seen very clearly in the exercise known as "climbing hand over fist," and yet under ordinary circumstances this is not followed by any evil effects. It is only when the climber gets exhausted and hangs a dead weight by his arms that any symptoms have been observed. The forced extension of the head must, too, render the conditions particularly unfavourable. Several examples of what the Germans call "*Klimmzuglähmungen*" have been reported, and always under these circumstances; the subjects are generally recruits unskilled at gymnastics, and probably not in proper training. One of

these cases will be referred to in some detail on a later page ; mention is made of them now to show that, so long as the muscles have their tone signs of pressure on the brachial plexus do not occur, and it is fair to suppose that this immunity is due to the absence of this lever action of the humerus and scapula on the clavicle.

It has been suggested that the compression may be between the clavicle and the transverse process of either the sixth or seventh cervical vertebra, but the suggestion was made under the erroneous idea that elevation of the arm was accompanied by elevation of the clavicle. We know now that this is not the case, and with the recognition of this fallacy the theory depending upon it falls to the ground.

At one time, too, it was believed that the seat of the lesion was the axilla, and the cause of it, pressure from the head of the humerus. It is hardly worth while to discuss this, for some of the nerves most commonly implicated never enter the axilla at all. Except in actual dislocation there is no reason to believe that the head of the humerus ever acts in the way supposed.

Before dismissing this part of the subject it is necessary to lay stress upon the fact, that the mechanism which has been described comes into play only in pure lateral elevation of the arm. The line of the acromio-clavicular joint is perfectly adapted (without any movement on the part of the clavicle) to permit that rotation of the scapula obliquely forwards which is the main preliminary in the combined movement of the limb upwards and forwards. Consequently the danger to the nerves is to be feared in pure lateral elevation only, and it is to this particular action, therefore, that our attention to-day is solely directed.

How far does the element of traction enter into the causation of these paralyses ? This can easily be answered on the cadaver. If the arm be raised laterally above the head, it will be found that the nerve-roots in the neck still remain quite lax, and it is not until the head is forcibly rotated to the opposite side that the cords show any signs of tension. The point of fixation under these circumstances is the seat of pressure between rib and clavicle. It

is evident that it is only in exceptional cases, then, that the nerves are pulled as well as squeezed. One or two cases of post-anæsthetic palsy are on record in which pupillary symptoms were present, and this would certainly indicate a lesion close up to the origin of the roots from the cord, such as might well be the result of traction. Still the most important effect of the position of the head just described is probably not the mere stretching of the nerves, but the putting so much tension on them that they are unable to slip away into the concavity of the clavicle and so escape pressure.

So far a good deal has been said as to the conformation of the bones and the action of the various articulations, but very little as to the actual position of the nerves concerned. There is no need to go into details of their general anatomical relations, but something is necessary under this heading.

The roots which subsequently combine to form the brachial plexus, after their exit from the spinal canal, issue from between the scalenus medius and anticus muscles, lying on the former until it is replaced by the first rib. The roots concerned are those from the fifth cervical to the first dorsal, both inclusive. The higher roots, the fifth and sixth in particular, are by far the most liable to the form of pressure with which this paper deals. The main reason is probably to be found in the fact that they lie externally to the others, and in this way are closer to the convexity, which the posterior aspect of the outer half of the clavicle presents in contradistinction to the concavity, which is shown by the inner half, and under the shelter of which the vessels lie safe.

And now to leave this somewhat dry discussion of fundamental facts for their application to clinical work.

The following are the various types of paralysis which are met with varying frequency from the form of pressure I have been describing.

(1) Total lesions of the brachial plexus, including the nerves to the serratus magnus and latissimus dorsi. A large proportion of all show this extensive distribution at first, but fortunately in the majority some degree of im-

provement sets in within a short time, and then the characteristic picture is lost. I have already given short notes of a case of this sort, and you have seen how serious the condition may be. I am able to show you to-day a little boy in the early stage of recovery. The paralysis is the result of a fall which appeared to be of no severity in itself, but in which the arm happened to be in an extended position above the head. This accident occurred about three months ago. At first the left upper limb was absolutely motionless; even the fingers showed not the slightest response to the strongest voluntary efforts of the patient. All the muscles concerned developed the reaction of degeneration in varying degrees, the upper arm muscles being the worst, as usual. Even now, after this lapse of time, the only movements possible are very slight flexion and extension of the thumb and fingers. No doubt improvement will continue, and considering the youth of the subject there is a fair chance that it will eventually become complete. If it does not the final result will probably be a more or less pure example of the type shown in the next group, *i.e.* of Erb's palsy.

I have no doabt myself that many of the total lesions of the brachial plexus which are met with by surgeons are really members of this class. They are commonly put down to rupture, but on very insufficient grounds, and it will be found that the seat of the lesion is almost without exception precisely in this spot, between clavicle and rib. The difficulty in being dogmatic about these is that the injury is commonly a severe one, and so often attended by a fracture of the clavicle. Of course it is a possible and, in fact, very common event for the clavicle to be broken by direct violence, and to crush the plexus in consequence. But it is not of such cases I am speaking.

(2) The second group includes a large proportion of the form of paralysis which is known as Erb's palsy. This is essentially a lesion of the fifth and sixth cervical nerve-roots. The muscles affected are the deltoid, the clavicular part of the pectoralis major, the brachialis anticus, biceps, the supinator longus, and very often the supra- and infraspinatus. The resulting paralysis renders useless the upper

arm, which hangs helplessly at the side; in addition to this there is loss of all power of flexion of the forearm. Practically the whole limb is helpless, the hand alone retaining its power. The symptom-complex is therefore very characteristic. It is occasionally seen in spinal infantile paralysis, but it is seldom that this occasions any difficulty in diagnosis if attention is paid to the history. The following is a typical example.

H. R—, æt. 20, was seen by me on January 5th of last year, when he gave the following history. On August 3rd, 1898, he was placed under an anæsthetic (apparently chloroform) for the opening of an abscess which had formed in the right axilla, in consequence of a poisoned wound of the thumb. He stated that he was under the anæsthetic three quarters of an hour, but considering the size of the scar and the nature of the operation this is probably an exaggeration. The arm was then kept bandaged for a month to the side. The bandage was of ordinary soft material, and does not seem to have been applied tightly; at all events the patient had no pain, and the hand did not swell or get blue. When he first tried to use the limb he found himself unable to move the upper arm from the side, or to flex the forearm, but he could move his fingers quite well. There was no affection of sensation at any time.

On examination there is a small linear scar, about an inch and a half long, in the right anterior axillary fold—the only sign of the seat of the abscess. Passive movements are free in all directions and are carried out without pain. All power of abducting the upper arm from the side is lost, and flexion of the forearm is markedly weak. The right deltoid and the clavicular part of the pectoral are extremely wasted; in the supra-spinatus and infra-spinatus the change is not quite so well marked, while in the biceps and supinator longus the atrophy, though definite, is comparatively slight. The reaction of degeneration is complete in the deltoid, but only partial in the spinati muscles, while the supinator longus shows no change. The patient was not seen again, but there can be little doubt that recovery would eventually take place, though probably only after a

considerable lapse of time. Not only may this type occur, so to speak, primarily, as in this case, but not infrequently secondarily as a stage towards recovery. As a rule the eighth cervical and first dorsal roots, which are responsible for the hand muscles, and to a considerable extent also for those of the forearm, recover rapidly, and Erb's palsy is left as a residuum.

(3) The third group is distinctly rare. The main symptom is paralysis of the serratus magnus on one or both sides with or without the affection of other muscles. A very good example is afforded by a case shown at the Clinical Society on February 25th, 1898 ('Clin. Soc. Trans.', vol. xxxi, p. 299). I take the liberty of giving a brief abstract of the main facts as they appear in the 'Transactions' of the Society. The patient had passed through an attack of double pneumonia. Signs of fluid having appeared on the left side, and the presence of pus having been ascertained by puncture, on November 1st resection of two inches of the tenth rib in the line of the angle of the scapula was performed. On November 11th a similar operation was performed on the right side on the corresponding rib, and again pus was evacuated. The patient rapidly improved, and on the 25th was sent to a convalescent home almost well of his operations. While still in the hospital patient noticed that he could not properly raise his arms, but he said nothing about it. At the convalescent home this loss of power increased. He was readmitted into the hospital on January 29th with complete wasting and paralysis of both serrati magni, and also wasting of the left infra spinatus. The following are the comments made on the case by the author:—"The incisions are too low down for any injury to have been done to the serrati or the long thoracic nerve. Moreover, the left supra-scapular nerve is paralysed. The lecturer on anatomy at the hospital, who saw the case, suggested that the long thoracic nerve and the supra-scapular nerve are close to one another, and also to the apex of the pleura, and that possibly some extension of inflammation from the pleura might have reached them at this point. I am not aware of any similar sequence to the operation for empyema having occurred,

and perhaps the peripheral neuritis was the result of septicaemia."

There can hardly be any doubt that this is a case of post-anæsthetic palsy, the result of elevation of the arms above the head. It is precisely in operations for empyema that these casualties are most likely to occur, and naturally so. It is not surprising either that the paralysis should not have been noticed for so long after the operation. The main symptom of paralysis of the serratus magnus is, of course, inability to raise the arm above the level of the shoulder. A man who has just had excision of rib on both sides is not likely to be allowed to attempt that movement, or even to be inclined to try it for a considerable time. The affection is unaccompanied by pain or any material loss of sensation, and there is accordingly nothing to reveal its presence until convalescence is advanced. The apparent increase of the paralysis after it had once been noticed is curious, but it has been observed in undoubted cases of post-anæsthetic palsy. The explanation just offered of the cause of the paralysis converts an otherwise mysterious case into a simple one. Probably if attention had been called to the condition at the time, the affection would have been found to be much more extensive than when it was seen later. The unusual distribution of the palsy is to be looked upon as an instance of the irregular way (within certain limits) in which these lesions clear up. A similar case has been described by a German observer, occurring in a recruit who was undergoing gymnastic training. He was raising himself up to the trapeze by his arms when his strength failed, and he hung for a minute or so helpless from the bar. He at once lost power in both arms, and this subsequently increased. Other muscles were affected, but when he was seen some weeks later the paralysis of both serrati was the predominant clinical feature.

Sir William Gowers in his 'Manual of Diseases of the Nervous System,' describes prolonged exertion with the arms raised above the head, as in whitewashing, as a cause of serratus magnus palsy. He explains it as being probably due to pressure on the nerve by the contracting muscle. So

far as my own experience goes in cases of this sort they occur as a rule in men of fine physique who are accustomed to heavy work, but I cannot say that I have been able to trace such a connection between the character of the work and the paralysis as Sir W. Gowers would suggest. The difficulty from the theoretical point of view in accepting this interesting suggestion as it stands, is that the serratus is so constantly used in every sort of muscular effort in which the upper limb is concerned, that if muscular contraction could hurt the nerve, the wonder would be that it should ever escape. If, however, for muscular pressure we substitute that due to the approximation of the rib and clavicle, which is brought about by the position of the arm, the result becomes comprehensible. This is of course pure theory, but at all events it is supported by the solid fact that this form of compression is effective under certain circumstances.

It is not worth while to multiply instances of these injuries, though it would be easy to do so ; enough have been given to illustrate the various clinical garb which they may adopt. Mention may be made, however, of another method of classification, based on the circumstances under which the hyper-extension of the arm has occurred. *Post-anæsthetic* palsy is a term which explains itself, and several examples of the type have been mentioned in the previous pages. *Obstetric* palsy is a subject which has been ably dealt with by my colleague, Mr. Robinson. He, however, attributes all the importance to the stretching of the nerve-roots by the traction of the obstetrician. I believe, on the other hand, that the main cause is the hyper-extension of the arm and that traction is, as has been explained above, merely an adjuvant. At all events the class of case with which Mr. Robinson has dealt, corresponds precisely in the distribution of the paralysis, and further in the order of recovery, with those of which I have been speaking. As an illustration I would refer you to the case before you to-day. But to leave the contentious subject of obstetric palsies, we may mention another group as to which there is no doubt—the *climber's* palsy—to borrow a term from the Germans. A curious group to which one is tempted to

apply the term *nursemaid's palsy* also deserves a passing reference. Some years ago in the family of a distinguished medical man a child suddenly developed paralysis of one arm. The lesion was of considerable severity, and in default of other explanations was put down to infantile paralysis, in spite of the absence of any symptoms save those referable to the limb. Eventually recovery was complete, and this fortunate result excited considerable surprise in view of the diagnosis. But before long another member of the family was affected in a similar manner. More remarkable still a third attack soon occurred in the same family, and a more satisfactory explanation had to be sought. The conclusion finally arrived at was that the nursemaid who took the children out was responsible for the trouble, through her practice of lifting the child out of the perambulator by one arm. This is the more interesting, and the conclusion is the more valuable, as at that time there was no conception of the manner in which these results could be brought about. It is no exaggeration, then, to claim for the group of paralyses with which this paper deals a considerable measure of importance, for the knowledge of their existence leads automatically to measures of prophylaxis in nine out of ten cases. Fortunately the prognosis is nearly always good, but it can be seen from some of the cases to which reference has been made, that recovery may be long delayed and the period of disability of very serious import.

HYDATID CYST OF THE SPINAL CANAL CAUSING PARAPLEGIA

(WITH A DIGEST OF PREVIOUSLY RECORDED CASES).

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THE occurrence of hydatid cysts within the spinal canal is of such rarity that a short account of a recent case and a résumé of the literature on the subject may be of interest. I desire to thank Dr. Hawkins for kindly lending me a bed, and successive House Physicians (Messrs. Thorp, Howlett, and Hedley) for the very careful notes which they took.

The patient, Charles B—, ten years of age, living in a village in Buckinghamshire, was admitted to George Ward on July 25th, 1899, for left hemiplegia. The following history was obtained :—He had enjoyed perfectly good health till three months before admission, when he complained of pain, referred to the region of the left shoulder. This did not appear to have been persistent or severe, and had ceased before he came in. Three weeks before admission he first

complained of weakness in the left arm, so that he had difficulty in dressing himself. A fortnight later he began to drag the left leg. The weakness rapidly increased, and in two days he was unable to walk, and was admitted to the hospital with well-marked left hemiplegia and retention of urine, sensation being unaffected. The next day there was loss of power in the right arm, followed two days later by weakness in the right leg, which soon became completely paralysed so far as the nervous symptoms were concerned.

To put the case briefly, within a month from the first sign of weakness in the left arm there was complete paraplegia with automatic incontinence of both urine and faeces, together with almost complete paralysis of both arms. In addition there was a tumour to be felt in the abdomen, apparently connected with the liver.

The condition after the paralysis had reached its maximum, on August 10th, was as follows :

A bright healthy-looking boy complaining of inability to move his arms and legs, of loss of control over his sphincters, and of some pain on moving his head.

Cranial nerves.—There was no affection of any cranial nerves at this time. Later there were some alterations in the pupils.

Neck muscles.—The boy complained of pain in the neck when he moved his head, or when it was passively rotated, but there did not appear to be any weakness. (The cause of this will be discussed later.)

Upper limbs.—Both arms were wasted and flaccid. There was no power of movement in the left arm, any effort on the patient's part to move his forearm resulting only in slight movement of the shoulder-girdle by the trapezius. In the right arm there was slight power of flexion of the elbow by the biceps, but no power of extension.

Intercostal muscles.—Costal respiration was entirely abolished, respiration being almost entirely diaphragmatic, with a little elevation of the upper part of the thorax by the trapezius and sterno-mastoid. This condition continued unchanged up to the time of his death ten months later.

Lower limbs.—Voluntary movement was entirely abolished. The legs were rigidly extended as a rule, but occasionally

they were drawn up by spasm of the flexors. These spasmodic contractions caused considerable pain.

Plantar reflexes.—Well-marked dorsal flexion of the hallux as well as the other toes on stroking the sole (Babinsky's sign).

Deep reflexes.—*Knee-jerks* much increased on both sides; double knee-clonus and ankle-clonus.

Organic reflexes.—Retention of urine with automatic incontinence. Obstinate constipation, and often involuntary defæcation into the bed. No priapism, such as is often seen in cases of compression of the cervical cord.

Sensation unaffected everywhere at first (see later note). There were no pains down the arm to suggest pressure on the roots of the brachial plexus.

Liver.—A small tumour, the size of a walnut, could be felt below the right costal margin in the neighbourhood of the gall-bladder. It was smooth and round. On its inner side could be felt a smaller nodule (this was probably the gall-bladder itself). The masses came down on respiration, and appeared to be attached to the liver. There was no general enlargement of the organ. Two round masses could also be felt, one lying transversely just below the umbilicus, freely moveable, and another in the left lumbar region.

The condition underwent very little change during the next month. The paralysed legs became spastic, and there were frequent jerkings and cramps of both lower limbs, which caused much suffering. This condition was much relieved by applying weight-and-pulley extensions. The paralysis of the arms was almost complete, a feeble movement of the biceps on the right side alone persisting. There was some blunting of sensation on the right hand and forearm extending up the inner side of the upper arm for a few inches above the elbow. The area involved varied from hour to hour. The limits were very ill-defined, and did not correspond to "root areas," and sometimes only disseminated patches of blunted sensation could be demonstrated.

September 20th, 1899.—There had been no change in the general condition. There were at this time several symptoms probably due to interference with the fibres

passing down the cord to the cervical sympathetic. For some days the pupils had varied in size. Occasionally they were equal, but more often they were rather dilated, the right being larger than the left. They contracted normally to accommodation. On illumination with a bright light each contracted slightly and then oscillated. They both dilated still further after instillation of a few drops of cocaine. There had been several attacks during the previous two days of unilateral flushing and sweating, confined to the right side of the face, the left remaining pale and dry. The line of demarcation in the middle line of the face was very striking. The boy did not complain of any uneasy sensations in connection with these attacks.

November 8th.—The condition still showed little change. The attacks of flushing and sweating of the face still occurred, but were no longer unilateral, but affected both sides equally. State of pupils unaltered. The mass connected with the liver was still felt. It was not always accessible to palpation, but seemed to slip up behind the liver.

During December he had a sharp attack of influenza, followed by otitis media. This soon subsided. No alteration of the nervous symptoms took place during the attack.

February, 1900.—The general condition remained the same. He was bright, and complained of no pain except from the contractions of the legs. Paralysis of lower limbs and intercostals unaltered. There was, however, diminution in the paralysis of the arms. He could just raise his right hand to his head, and when his left hand was passively raised he could feebly extend it himself. There was no return of power below the elbow in either hand. There was only very slight blunting of sensation in the hands; there had been none at any time in the trunk or lower limbs. Condition of liver unchanged.

April.—The only change to record was still further return of power in the right arm. He could flex and extend the elbow, and flex and extend the wrist, but both movements were very feeble. He could just grasp an object put into his hand. In the left arm the only movement which returned was extension at the elbow. There was also very slight power of movement in the ankles on both sides.

On June 11th, 1900, he complained of pain down the right arm. The temperature rose to 103° F.; he became dyspnœic, and a systolic murmur developed over the pulmonary area; he became drowsy and had a convulsion, the temperature rising to 106° F., and he died an hour or two after without recovering consciousness. During the last few weeks a bedsore developed over the sacrum, exposing the bone. At the time of death this was granulating up, and there were no sloughs. The urine was never decomposed, and until the final pyrexia, which only existed for a day, the temperature had not been higher than 99° F. for months.

The autopsy was performed by Dr. Box nineteen hours after death. The body was generally emaciated, the wasting being most marked in the legs.

Spinal canal.—When the spinal canal had been completely exposed, an elongated hydatid cyst was found to lie

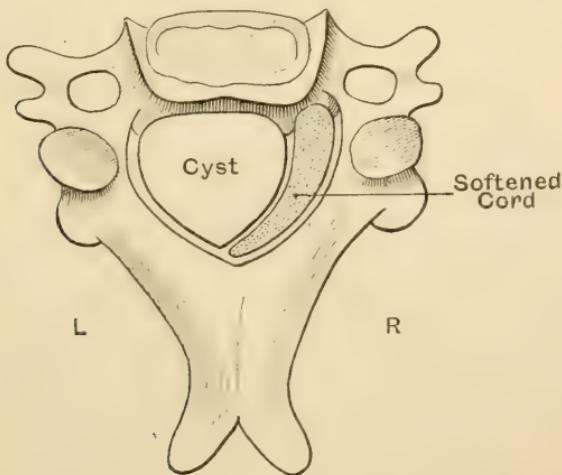


FIG. 1.—Diagram showing relations of cyst and spinal cord at the level of the third cervical vertebra (from a sketch by Dr. Box).

outside the dura mater in the cervical region, extending vertically for one and a half inches, eroding the posterior aspect of the bodies of the second, third, and fourth cervical vertebræ, and had also thinned the left side of the arches near the bodies. The spinal cord was displaced backwards and to the right, and stretched like a band over the con-

cavity of the cyst. The cyst itself was easily picked out from between the cord and the bones, and appeared to have no adhesions to the latter. It contained no daughter-cysts. The cord itself was softened from pressure myelitis and was flattened, being less than a quarter of an inch thick at the point of greatest pressure. There were no other cysts in the spinal canal. There was no spinal meningitis.

Brain.—Nothing abnormal found in the brain or meninges to account for the convulsion of the day of death.

Liver.—On opening the abdomen and exposing the liver a firm whitish tumour was found to project beyond the anterior margin from the under surface of the liver. It was roughly hemispherical, and nearly two inches in diameter. It arose from the quadrate lobe, and was slightly adherent to the gall-bladder on its left, and to the transverse mesocolon in front. It felt and looked exactly like new growth, but when incised was found to be a greatly thickened hydatid cyst, closely packed with small daughter-cysts. The liver was otherwise healthy. The other abdominal organs were quite healthy, and there were no cysts in the abdomen or thorax. The masses felt in the abdomen at an earlier period of the case were evidently faecal. There was no morbid change in the heart or lungs.

Diagnosis.—So far as the nervous symptoms were concerned, the gradual onset, the affection of the left side some days before the other, and the spastic paraplegia, pointed clearly to compression myelitis. The affection of the arms and of the intercostal muscles from an early period, showed that pressure was being exerted on the upper part of the cervical cord. The escape of the right biceps seemed to point to pressure lower than the emergence of the fourth cervical root, that is, according to Gowers, opposite the third cervical vertebra. So far the diagnosis was verified by the autopsy. With regard to the cause of pressure, however, the diagnosis during life was entirely at fault. The presence of the tumour in connection with the liver was from the first considered the key to the situation, but unfortunately its significance was misinterpreted. It was thought to be a neoplasm, and the tumour compressing the cord was believed to be a secondary growth. This view seemed to be

fortified at first by the presence of other tumours in the abdomen, which must have been faecal masses. There was no evidence of caries, and no history pointing to syphilis, nor was any improvement manifested after treatment by iodide of potassium. The possibility of both tumours being hydatid cysts never crossed my mind. Even if the abdomen had been explored, so thick was the wall of the hydatid cyst of the liver, that just as at the post-mortem examination, it would probably have been believed to be a growth. Mr. Abbott was good enough to see the patient, and the question of laminectomy was discussed ; but in the presence of what was believed to be a malignant growth in the liver we did not consider it justifiable to perform such a hazardous operation as the exposure of the upper cervical cord would have been, since the diaphragm was the only respiratory muscle which was acting. Still, in the face of what was discovered, and of the ease with which the cyst was picked out of the spinal canal, one cannot help regretting that an exploration was not made.

The absence of anaesthesia was very striking, and difficult to explain. The pain on movement of the head was probably due to traction on the upper cervical roots. Mr. Horsley has drawn attention to the amount of torsion which must normally take place in this part of the cord when the head is moved from side to side. The autopsy did not throw any light on the actual cause of death. In one somewhat similar case in the series appended (No. 17) the terminal symptoms appeared to be due to rupture of the cyst causing general cerebro-spinal meningitis, but in the present case the cyst was unruptured.

I have collected all the cases which I can find recorded, and no doubt there may be a few others. They are given here only in outline, and, as far as possible, in order of publication.

1. Chaussier (quoted by de Chaubry in 'Journal de Médecine,' vol. xix, 1807).—A woman aged twenty-two exhibited signs of pressure paraplegia during pregnancy ; there was also occasional ptosis. She died of puerperal septicæmia five months after the commencement of spinal symptoms. Post mortem a large hydatid cyst was found in the right lung, which had eroded the bodies of the third and fourth dorsal

vertebræ, and there were also a dozen small cysts within the canal at that level, compressing the cord. Nothing was found in the brain to account for the ptosis.

2. Esquirol ('*Bulletin de la Faculté et de la Société de Médecine de Paris*, t. v, 1817).—In this case the patient died in the status epilepticus, and there is no note of clinical symptoms bearing on the spinal condition. Acephalocysts were found between the dura mater and the cord, extending from the medulla to the lumbar region. No note as to hydatids elsewhere.

3. Reydellet (quoted by Maguire, '*Dict. des Sciences Médicales*', t. xxxiii, art. "Moelle," 1819).—The patient was a woman twenty-two years of age. The earliest symptoms were radiating pains over both shoulders, of varying intensity. After three years there were symptoms of paraplegia, the left leg being much less affected than the right. An external tumour formed in the back, which was opened and found to contain hydatids. The large sac was found to communicate with the spinal canal. The patient died twelve months later from the occurrence of profuse suppuration in the sac.

4. Morgagni ('*De Sedibus et Causis Morborum*', v, 168, 1822, quoted by Leyden, '*Klin. der Rückenmarkskrank.*', vol. i, p. 287).—In this case the symptoms commenced with persistent lumbar pain. After nine months she became paraplegic and succumbed. Post mortem, a large hydatid cyst was found in the retro-peritoneal tissue near the left kidney, containing many daughter-cysts. The spinal canal had been invaded through the intervertebral foramina, which were dilated. No note as to hydatids elsewhere.

5. M. Mélier ('*Journ. gén. de méd.*', Paris, vol. xcii, p. 33, 1825).—The patient was a woman twenty-nine years of age. Five years before death she complained of vague pains in the loins, which subsequently increased by movement. After three years she began to waste, and weakness and unsteadiness of the limbs came on, the pains at the same time becoming more severe. Later on there was

complete paraplegia and loss of sensation up to the waist, but the shooting pains continued. There was retention of urine and faeces. At the autopsy a hydatid cyst containing twenty daughter-cysts was found in the muscles in the mid-dorsal region, which had eroded the arches of the fifth and sixth dorsal vertebræ. It had passed through the dilated fifth intervertebral foramen and a mass of cysts was found outside the dura, compressing the cord from the level of the fifth to that of the seventh dorsal vertebra. None were found in the viscera.

6. Mazet ('Bull. de la Soc. Anat. de Paris,' vol. xii, p. 226, 1837).—The patient applied for treatment for an abscess in the sacral region, which on incision proved to be a suppurating hydatid. The whole sacral canal was full of hydatids and the bone was "carious" (? eroded).

7. Dumoulin ('Bull. de la Soc. Anat. de Paris,' vol. xxii, p. 321, 1847).—The patient was a man twenty-five years of age. Eighteen months before death he began to suffer from pain in the mid-dorsal region, which he attributed to a blow. The pain was almost continuous. There was also local tenderness. The pain was relieved for a time by free leeching, but after a short remission returned and became steadily more severe. Two months before death both legs became weak and ataxic. In ten days paraplegia had become complete, and the sphincters were paralysed. At the autopsy a dozen hydatids were found outside the dura mater lying between the second and fourth dorsal vertebræ. There was also a cyst externally in the muscles of the back. No mention of cysts elsewhere.

8. Dubois ('Bull. de la Soc. Anat. de Paris,' vol. xxiii, p. 95, 1848).—The patient was a girl twenty years of age. The symptoms first noticed were pains in the lumbar region, followed in two months by weakness of the lower limbs with ataxy and shooting pains. The most striking symptom in this case appears to have been erroneous localisation of cutaneous sensations in the lower limbs. If the leg were pinched in any part pain was always referred to the sole, never to the part pinched. Ultimately the patient became

completely paraplegic, developed bedsores, and died from exhaustion. A hydatid cyst was found which had destroyed the body of the eleventh and attacked that of the twelfth dorsal vertebra, compressing the cord at that level. The cyst contained many daughter-cysts. No cysts were found elsewhere in the body.

9. Cruveilhier (quoted in ‘Bull. de la Soc. Anat. de Paris,’ vol. xxv, p. 63, 1850) states that he has seen hydatid cysts “several times” between the dura and the vertebræ; but he only quotes one case, that of a woman who was paraplegic, and had, during life, a tumour the size of the fist in the dorsal region. At the autopsy this was found to be a hydatid, which had developed within the spinal canal compressing the cauda equina, and, having eroded the laminæ of the lumbar vertebræ, had formed the subcutaneous tumour. There is no mention as to the presence of hydatids in other parts of the body.

10. Goupil (‘Bull. de la Soc. Anat. de Paris,’ vol. xxvii, p. 211, 1852).—The patient, a man of forty, had complained of weakness of the legs for some time, but on the day of his admission he had walked a couple of miles to the hospital. Two days later he became completely paraplegic, sensibility also being lost. Bedsores developed, and he died three weeks after the onset of paraplegia. At the autopsy an extra-dural hydatid cyst was found compressing the lumbar region from behind. None were found elsewhere.

11. J. W. Ogle (‘Trans. Path. Soc.,’ vol. xi, p. 299, 1860), in the course of a communication on another case of hydatid disease, shortly refers to a specimen in the Museum of St. George’s Hospital, which he describes as “a cyst containing a vast number of smaller ones, found within the substance of the spinous process of the seventh cervical vertebra, projecting upon the spinal cord, and producing symptoms not unlike cancer. In this case there were also a few hydatids within the cancellous structure of the body of the vertebra.”

12. Bartels ('Deutsches Arch. f. klin. Med.,' vol. v, p. 108, 1869, with an excellent coloured plate).—The patient was a farm labourer. The symptoms began nine months before death, the first being pain in the left arm, which commenced in the fingers and shot up to the shoulders. Later on there was similar pain in the right arm, and severe fixed pain in the region of the seventh cervical vertebra. Weakness of the legs came on gradually, and when admitted five months after the onset of symptoms he was almost completely paraplegic, with much pain in the legs as well as the arms. Bedsores formed, and he gradually sank. At the autopsy four cysts were found *within* the dura at the level of the seventh cervical, the upper and lower dorsal regions, and over the lumbar enlargement. They were pressing on the posterior aspect of the cord, which was deeply indented by them. There were none elsewhere.

13. Moxon, 1871 (quoted by Fagge, 'Principles and Practice of Medicine,' vol. i, p. 413).—The patient, a woman of fifty-eight, had suffered for eleven months from pain in the side, and has been paraplegic for six weeks. The cyst was multilocular, budding externally. It formed a large elastic swelling on the left side of the spine and made its way into the canal through the second and third lumbar vertebrae. It compressed the cord, but did not penetrate the dura mater.

14. Liouville and Straus ('Bull. de la Soc. Anat. de Paris,' third series, vol. x, p. 93, 1875).—A man fifty-two years of age was suddenly seized with paraplegia. There was no history of previous pain. With the onset of the paralysis there was much tingling of the affected limbs. Bedsores developed, and he died five months after the onset of symptoms. A cyst was found within the spinal canal compressing the dura and cord and excavating the bodies of the vertebrae, the intervertebral disc being destroyed. Between the left lung and the diaphragm was a vast collection of small cysts the size of peas embedded in some viscous material. They had presumably escaped from a larger cyst.

15. Reclus ('Bull. de la Soc. Anat. de Paris,' third series, vol. x, p. 94), in the discussion on Liouville and Straus's paper (*vide supra*), states that in Duplay and Morat's work on 'La Maladie de Pott' there is an account of a case in which a hydatid cyst compressed the cauda equina.

16. Murchison ('Diseases of the Liver,' second edition, p. 128, 1877) gives a brief reference to a specimen in the museum of the Middlesex Hospital. The patient was a woman forty years of age, who had been admitted to hospital suffering from paraplegia and retention of urine. She died with a large slough on the sacrum, and the bladder was found to be inflamed. Two hydatid cysts were found in the spinal canal in the dorsal region, compressing the cord. There was also a cyst on each side of the spine in front, raising the pleura from the bodies of the vertebræ. It is not stated whether these cysts communicated with those within the spinal canal.

17. H. S. Wood ('Australian Med. Journ.' vol. i, new series, p. 222, 1879).—The patient was a woman fifty-four years of age, who for two years before death complained of flying pains in her legs from time to time, which were supposed to be rheumatic. Two months before death she had a severe attack of darting pains, this time accompanied by incontinence of urine. Both symptoms passed off after a few days in bed. Ten days before death there was again incontinence of urine and numbness of the right arm and leg, without any loss of movement in the leg. A few days later there was numbness and loss of power of the opposite arm and leg, and she became comatose and died. Post mortem, a large hydatid cyst was found within the dura opposite the last lumbar and first three sacral vertebræ, extending through the upper three sacral foramina to communicate with a cyst on the posterior wall of the pelvis. The cyst contained many daughter-cysts, and the upper end was open. Presumably it had ruptured, for an "immense quantity" of fluid was found effused beneath the membranes of the brain and spinal cord. There was a cyst four inches in diameter, containing daughter-cysts in the liver, but there

were none in the brain. Probably the terminal symptoms were due to rupture of the cyst and consequent meningitis.

18. Lewellin (quoted by Cobbold in 'Parasites,' p. 140, 1879).—“Dr. Lewellin has mentioned to me a fatal case in which a hydatid occupied the whole length of the vertebral canal. The patient was under Dr. Annand's care. There could be no doubt as to the genuineness of the case, as the spinal cyst was tapped during life, when hydatid hooklets were found.”

19. Foerster ('Handb. d. path. Anat.', vol. ii, p. 639, quoted by Maguire) “mentions a case in which an echinococcus cyst had produced caries of the vertebrae, abscess between the muscles of the back, perforation of the dura, and purulent inflammation of the spinal cord and its membranes.”

20. Rosenthal ('Handb. d. Nervenkrank.', p. 192, about 1880).—The patient was a boy of fifteen, who suffered from paraplegia of gradual origin, pain, tingling and formication in the legs being prominent symptoms. Ultimately there was complete paraplegia with anaesthesia up to the level of the nipples. Death occurred from bedsores and pyæmia. At the autopsy a hydatid cyst, the size of a goose's egg, was found between the pleura and the bodies of the third to the fifth dorsal vertebrae, which were extensively eroded. The cyst entered the spinal canal on the right side, compressing the dura and spinal cord.

21. Houtang ('Bull. de la Soc. Anat. de Paris,' fourth series, vol. x, 1885).—The patient was a well-nourished woman, fifty-three years of age. Five months before death she complained of pain in both legs. The pains were much worse on movement, and she took to her bed. The pains were continuous, and the legs rapidly atrophied. There was no definite paralysis in any part, and at first no affection of cutaneous sensation. A month before death there was aggravation of pain and incontinence of urine. There was still no definite paralysis, but there was anæ-

thesia in both legs as high as the knees. There was great deformity of the back, said to date from infancy. Post mortem a large hydatid cyst was found in front of the lumbar spine on the right side, displacing the kidney forward. The cyst reached from the eleventh rib to the pelvis, and was attached to the body of the third lumbar vertebra, which was partly absorbed. The dura was pressed upon at this level (which would involve the cauda equina). A prolongation of the cyst also passed up posteriorly outside the quadratus lumborum, but owing to the scoliosis it was not detected during life. No cysts were found in the internal organs.

22. Pedkoff ('Meditinskoe Obozrenie,' quoted in 'Lancet,' 1887, vol. i, p. 727).—The patient was a young woman with a lump in the back, and increasing paraplegia. An incision was made into the tumour, which proved to be a large hydatid cyst with many daughter-cysts, over a hundred escaping in the course of a few days. The patient, however, died some weeks later. No post-mortem examination could be made.

23. R. Maguire ("Hydatids of the Spinal Canal," 'Brain,' vol. x, 1887).—Patient a lad sixteen years of age. The illness was attributed to a chill at first. There was severe pain across both shoulders for some weeks, followed by signs of gradual pressure on the posterior part of the cord, ataxy preceding weakness. He ultimately became paraplegic, and had paralysis of the sphincters. In this case there were disturbances of the pupils. At first they were variable, sometimes much dilated and sometimes contracted. For some days before death they were contracted, and there was only slight dilatation when they were shaded. Post mortem there was a large number of hydatid cysts lying between the dura mater and the last cervical and the upper six dorsal vertebrae. They were partly lodged in the bone of the vertebral arches, but many of them were in the loose connective tissue. There were no hydatids in the other organs.

24. L. Hirt ('Berl. klin. Wochenschrift,' vol. xxiv, p. 36, 1887).—The patient was a man sixty-six years of age. The symptoms began sixteen months before death with giddiness and some pains in the lower limbs, followed by unsteadiness and loss of control over the sphincters. When seen, ten months after the onset, there was marked weakness and ataxy of the lower limbs, so that he could hardly stand or walk. There were shooting pains in the legs, and attacks of vomiting. Later on there was some ptosis and also some weakness of the left sixth nerve. There was complete incontinence of both urine and faeces, and deep bedsores formed over the sacrum. During life the case was supposed to be one of tabes, but at the autopsy a hydatid cyst was found within the dura in the lower part of the spinal canal compressing the cauda equina, leading to secondary degenerations in the posterior columns. Nothing was found in the brain to account for the affection of the ocular motor nerves. (See Case I.)

25. Wiegandt (quoted in 'Centralbl.f. Bakteriol.,' 1888).—In this case the illness lasted ten months. There were symptoms of pressure myelitis in the dorsal region. At the autopsy ten to twelve hydatid cysts were found in the vertebral canal compressing the dorsal region of the cord. The vertebrae themselves were unaffected. It is not stated whether the cysts were intra- or extra-dural.

26. Marwood ('Australasian Med. Gazette,' Sydney, vol. viii, p. 182, 1889).—The patient, who was thirty-one years of age (sex not stated), was admitted for paraplegia and loss of control over the sphincters. No clinical details are given. Post mortem a cyst was found within the dura in the lumbar region compressing the cauda equina. It was the size of a hen's egg. The vertebral arches were thinned over it and cut easily with a knife. The cyst contained two daughter-cysts. Higher up, opposite the tenth and eleventh dorsal spines, were several cysts within the dura. There were also two cysts in front of the lumbar spine, the size of oranges, the one on the left side communi-

cating with the spinal canal by means of an old suppurating cyst. No cysts were found in the other organs.

27. Ransome and Anderson ('Brit. Med. Journ.', 1891, vol. ii, p. 1144).—The patient was a man forty-two years of age, who had complained for eighteen months of gnawing pain in the back and of shooting pains down the legs. The pain was not constant, but came on in attacks. Two months before admission there was aggravation of the pain, and he became weak and ataxic, so that when admitted he was unable to stand. There was dulling of sensation over various regions in the legs and thighs, but sensation was not completely lost anywhere. The knee-jerks were lost. A few days later complete paraplegia with abolition of sensation came on, and a bedsore formed over the sacrum. The symptoms were thought to point to compression of the cord by a tumour at the level of the eleventh dorsal vertebra. Laminectomy was performed, the eleventh and twelfth dorsal and first lumbar vertebræ being removed. The operation was extremely difficult on account of the obesity of the patient, and the cause of the compression was not found. At the autopsy, a few days later, an extra-dural cyst was found arising from the tenth dorsal arch, and two degenerating cysts with daughter-cysts were found in the right erector spinæ.

28. Friedeburg ('Cent. f. klin. Med.', vol. xiv, p. 51, 1893).—The patient, a man thirty-one years of age, had suffered for months from pains along the course of the right sciatic nerve, retention of urine, and occasional incontinence. He had at this time an ordinary intestinal *Tænia solium*, of which he was relieved by male fern. Four months later he began to lose flesh, and his legs became weak. Paraplegia, with loss of sensation as high as the umbilicus, developed rather rapidly, and he died a few weeks later. At the autopsy a hydatid cyst with daughter-cysts was found in the sacral canal, and some small extra-dural cysts at the level of the second dorsal root, and another in the pelvis the size of a turkey's egg.

29. Szekeres ('Pest. Med.-Chir. Presse,' 1894, p. 755, quoted in 'Centr. f. Chirurgie,' 1895).—The patient was a butcher, thirty-two years of age, who had had a tumour, supposed to be lipomatous, in his back for twelve years without any inconvenience. He then began to suffer from shooting pains in both legs and ultimately from spastic paraplegia. The tumour was incised and proved to be a hydatid, a process from which had passed into the spinal canal and pressed on the cord. The further history of the case is not given.

30. Wilms ('Beit. z. klin. Chir.,' vol. xxi, p. 151, 1898).—The patient was a young man twenty years of age. The symptoms began about three years before death, with pain first in the left and then in the right leg and thigh. There was some difficulty in micturition. The knee-jerks were lost. Symptoms continued without much change for a year, when a tumour was felt in the left hypochondrium. There was also a firm elastic fluctuating swelling to the left of the lumbar spine and above the iliac crest. The anaesthesia and weakness had increased. An exploratory puncture was made in the left lumbar region, and the clear fluid which was drawn off was found to contain hooklets. The tumour was incised and five daughter-cysts evacuated. A process from the cyst passed up into the spinal canal. From the second lumbar vertebra downwards the spinal canal was found stuffed with small extra-dural cysts, which were cleared out, the bone being scraped with a sharp spoon. Recovery from the operation was uneventful. There were, however, recurrences in the back muscles and in the iliac fossa, and in the prevesical tissue. After an operation on the last suppuration occurred, and a urinary fistula formed. After death six more cysts were found in the back muscles, but there was no recurrence in the spinal canal.

31. Gowers ('Manual of Diseases of the Nervous System,' third edition, vol. i, p. 306, 1899) makes a brief reference to a case under his care in which there were symptoms of an intra-spinal tumour in the lumbar region. "Mr. Horsley trephined the spine, and a quantity of cysts the size of peas

were found compressing the cord. They were removed and the patient recovered, but the damage was too great to allow the recovery of the extensive atrophic paralysis produced in the right thigh and hip muscles.” In this case the cysts were extra-dural, and some were lodged in spaces in the vertebræ. There was some recurrence of cysts a few months later.

32. Barrs and Trevelyan (‘*Brit. Med. Journ.*,’ 1899, vol. ii, p. 1354).—A brief note of the case of a man fifty-two years of age, who died in the Leeds General Infirmary with symptoms of acute myelitis. At the autopsy the cancellous tissue of the vertebræ was found to be extensively occupied by minute cysts, in one of which a scolex head was identified. In the spinal canal from the first dorsal to the second lumbar vertebra were many cysts of varying size and shape lying outside the dura. There were similar cysts in some of the intervertebral foramina; none elsewhere.

33. Present case.

The following references I have been unable to verify :

34. Frusei.—“*Cisti d’ echinococci della colonna vertebrata*,” ‘*Ann. Clin. del Osp. Incur.*,’ Napoli, 1876.

35. Bellencontre.—‘*Contribution à l’étude des Kystes Hydatiques comprimant la moëlle épinière*,’ Paris, 1876.

36. Jänicke.—“*Ein Fall von Echinococcus des Wirbencanal*,” ‘*Breslau aerztliche Zeitschrift*,’ 1879.

37. Galeno.—“*Sopra un caso di echinococco del midollo spinale*,” ‘*Gaz. Med. Ital. Prov.*,’ Padua, 1884.

Relation of cysts to the dura mater.—In the great majority of cases (twenty out of twenty-four in which the relation is stated) the cysts were external to the spinal theca.

Origin of Cysts.—In many of the cases the cyst invaded the spinal cord from without. In some cases it was not possible to state definitely where the cyst had commenced.

Of twenty-one cases where the information is sufficiently explicit, the following were the sites of origin of the cysts :

Cancellous tissue of vertebræ (8, 11, 14, 23, 27, 31, 32)	7 cases.
Extra-dural areolar tissue (7, 9, 28, 33)	4 , ,
Arachnoid tissue (12, 17)	2 , ,
Muscles of back (5, 13, 29, 30)	4 , ,
Lung or pleural cavity (1, 20).	2 , ,
Retro-peritoneal tissue (4, 21).	2 , ,

Level of cord compressed.—The great majority were in the dorsal region, as shown in the following table :

Cervical region	2 cases.
Dorsal region.	10 , ,
Lumbar	6 , ,
Cauda equina.	5 , ,
Dorsal, lumbar, and cauda equina	2 , ,
" Whole cord "	2 , ,

In four cases (12, 25, 26, and 28) there were cysts at different levels of the cord.

Existence of cysts in other organs.—In sixteen cases there is no explicit mention of their existence or absence, although as an autopsy was made their presence would almost certainly have excited remark. In another case there was no autopsy ; and in two the patient was still alive at the time the report of the case was published.

The figures are as follows :

Not stated	19
No other cysts	8
Dorsal muscles (7, 27)	2
Areolar tissue of pelvis (28)	1
Liver (17, 23).	2
Back muscles, iliac fossa, and prevesical areolar tissue (30)	1

In two cases (1 and 24) ptosis developed, for which examination of the brain afforded no explanation.

In case No. 28 the patient suffered from the presence of another *taenia* (*T. solium*) at the same time as the hydatid

cyst. As the cyst contained daughter-cysts, and was of some size, it could not have been a cysticercus cyst. References to such cysts will be found in the papers by Maguire (No. 23) and Wilms (No. 30).

FIBROID TUMOURS OF THE UTERUS COMPLICATING PREGNANCY:

A RECORD OF PERSONAL EXPERIENCE.

By CHARLES J. CULLINGWORTH, M.D.,
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So much stress has been laid upon the often very serious character of fibroid tumours as a complication of pregnancy, that considerable apprehension is apt to be excited in the mind of the practitioner whenever a pregnant woman is known to have one or more of these undesirable possessions. Whatever be their size, relations, or position, he pictures to himself all sorts of formidable difficulties, if not actually during the pregnancy, at any rate during labour. I believe most men would prefer to be confronted in their obstetric practice with a case of marked pelvic contraction than with a case of uterine fibroids. There is a degree of uncertainty as to the behaviour of the latter that increases the dread with which their presence is almost invariably regarded. It is obvious, however, that it is only under certain circumstances that the presence of fibroids is likely to prove formidable, and my chief aim in this communication is to allay unnecessary fears and to show that this complication does not necessarily portend disaster. With this object in view, I shall commence with a brief sketch of some cases that have come under my own observation, in which the fears expressed during pregnancy with regard to the probable effect of the fibroids upon the course of labour proved

to have been needless or exaggerated. In some of these cases I took upon myself the responsibility of advising against operative measures that others had proposed. It is sometimes forgotten that the responsibility that attaches to anyone who opposes an operation is quite as great as that which is involved in recommending it. For myself, I have seen so much unnecessary suffering result from delay and timidity in advising and carrying out operative treatment in obstetrics and gynæcology, that I never dissuade a patient from consenting to undergo an operation without a keen sense of the heavy responsibility I am taking upon myself. In order to make this record of my personal experience complete, I shall add to the paper a tabular statement of my other cases of fibroids in pregnant women (in all of which operative treatment was considered desirable or necessary), and I shall conclude with a case illustrating my views as to the advice that should be given to patients who, being the subject of uterine fibroids, are contemplating matrimony.

CASE I. *Sessile subperitoneal fibroid of fundus uteri; another tumour, thought at time to be cystic, lower down and behind uterus; induction of abortion suggested; pregnancy allowed to go on; uncomplicated labour at term; delivery of living child; subsequent history.*—On July 5th, 1893, I saw, in consultation with Dr. X, a lady æt. 34, who had been married on February 7th, and who was now nearly fifteen weeks advanced in pregnancy, her last period having commenced on March 19th.

On the right side of the fundus uteri was a broad-based subperitoneal fibroid, at least as large as the closed fist, pushing the uterus over to the left. Also on the right, but behind the uterus, and not low down in the pelvis, was a swelling, thought to be cystic and ovarian.

The questions presented to me were :

1. Shall the pregnancy be allowed to go on ?
2. Should the ovarian cyst be removed ?
3. If so, should it be removed before or after the uterus is emptied ?

I expressed the opinion that the pregnancy should for

the present be allowed to take its normal course, the case meantime being carefully watched. My reasons were that the fibroid was subperitoneal, and that the probabilities were that the cyst, being small, would rise out of the pelvis so as not to obstruct delivery. I then learnt that Sir John Williams had been consulted on June 30th, and had expressed himself in favour of arresting the pregnancy, and subsequently removing the cyst. Dr. X was himself rather disposed to agree with this advice. He consented, however, to recommend the provisional adoption of the course I suggested.

On October 30th Dr. X and I again met and examined the patient, as he had once more come to the conclusion that interference was desirable. I still counselled against it, and Dr. X again courteously agreed to abide by my advice.

On January 3rd, 1894, the patient was delivered of a living female child quite easily by means of forceps. There was no abnormal haemorrhage. The fibroid was scarcely felt, and the swelling lower down, which the doctor who attended believed (no doubt correctly) to be in all probability another and softer fibroid, did not cause any appreciable obstruction.

The doctor who attended the patient in her confinement, in a letter dated May 23rd, 1894, after giving me some particulars about the labour, goes on to say that "before the end of the ninth month [of pregnancy] the fibroid above the pelvis and to the right side seemed to flatten out with the enlargement of the uterus. At any rate, it did not form such a prominence as at the fourth month, when it felt like a large orange on the side of the womb. After delivery, when the womb contracted, it could still be felt, causing the latter to feel a double tumour, and not very much larger than an ordinary contracted *post-partum* uterus. There were no abnormal symptoms after delivery for a fortnight or more, . . . when phlebitis occurred, first in one leg, then in the other, without any uterine discharge being present. She had to keep in bed for several weeks owing to this, and still has some swelling—dilatation of veins and venules. The urine does not contain albumen. I examined her a few days ago, and found above the symphysis pubis

only an indistinct feeling of tumour on pressure externally. *Per vaginam* the uterus was somewhat fixed, and on bimanual examination appeared considerably larger than normal, but I could not make out a distinct outgrowth of fibroid, as was readily done previously. I could not feel any tumour towards the prominence of the sacrum, or laterally in this position separable from the uterine tumour. I did not examine the rectum, however.

"She is three weeks beyond her period, and there is a suspicion of pregnancy. I should like you to examine her and give your opinion as to the condition of things; also, if she is pregnant, is she to be permitted to go on?"

I saw the patient two days after this letter was written, viz. on May 25th, 1894. She looked very well, but there was some œdema of the left leg. She had last menstruated April 8th to 12th or 13th. Nothing definite could be made out on abdominal examination. A little clear fluid could be pressed from the nipple. On bimanual examination a group of fibroids could be felt reaching to the level of the umbilicus to the right of the middle line, the large one equal in size to at least an adult fist, and a smaller one below this and behind the uterus. There appeared to be an irregular swelling in front of the uterus. The body of the uterus was not easy to be defined on account of the tumours and the great thickness of the abdominal wall, but it was thought to be situated a little to the left of the middle line, with the axis of the canal straight.

I was unable to say with certainty that pregnancy existed, but there seemed little practical doubt about it. Apart from the condition of the veins of the legs, there was in my opinion no reason why, if pregnancy existed and were allowed to go on, it would terminate less satisfactorily than did the first pregnancy. I therefore advised that things should be allowed to take their natural course.

On January 16th, 1895, the patient gave birth to a son weighing $8\frac{3}{4}$ lbs. Everything went on satisfactorily and normally, both during delivery and subsequently. The existence of the fibroids was said to be only just ascertainable, and the patient herself had no consciousness of their presence. In writing to give me these particulars, the

husband expressed his gratitude for the advice that had secured to them two living and healthy children.

The patient had a third child about four years later, the confinement being in every respect normal. In April, 1900, the fibroid tumour was said to be certainly not larger, perhaps smaller, and the patient's health was reported to be excellent. I am informed that a fourth child was born in January, 1901.

*CASE II. Large subperitoneal fibroid of lower part of body of uterus ; Cæsarian section in thirty-ninth week suggested ; spontaneous rise of tumour out of pelvis ; delivery of living child per vias naturales ; subsequent history.—*On March 2nd, 1898, a medical man consulted me about his wife, aged 37, who was in the thirty-second week of her first pregnancy, and was said to have fibroids of the uterus. She had been married nearly four years. Menstruation had been profuse, and the patient had been curetted by an obstetric physician about two years ago. The last period had occurred July 20th to 24th, 1897. There was a large subperitoneal fibroid low down on the right side, not implicating the cervix, which was pushed over to the left. The tumour was just above the vaginal roof, but did not depress it. An opinion had been expressed that labour could not take place naturally if pregnancy were allowed to go to term, and it had been recommended that Cæsarian section should be performed about the 20th of April, *i.e.* in the thirty-ninth week. After examining the patient carefully, I formed the opinion that the tumour was tending to rise into the iliac fossa, and I advised that before Cæsarian section was resorted to, an attempt should be made under anaesthesia to push the mass up sufficiently to allow the head to enter the pelvic inlet, provided, of course, that it had not already moved up spontaneously.

Labour commenced naturally on April 22nd, the day on which the obstetric physician first consulted had arranged to come down and induce labour. On his arrival he found that the tumour had risen and could not be reached *per vaginam*. The labour was tedious, and delivery was effected by the high forceps operation. The child during its birth

narrowly escaped asphyxia. There was no other complication, and both mother and child made a satisfactory recovery.

On leaving her bed the patient found that there was some dribbling of urine on stooping or moving about. There was no incontinence during the night, or when patient was lying or sitting. Menstruation was re-established in six or eight weeks, and became very profuse. I was once more consulted about her six months after delivery. On examination I found a large fibroid resting on the anterior vaginal wall. I advised that mechanical support should be tried ; first, a cradle pessary ; if this should fail, a Blackbee's pessary ; and, finally, if neither of these answered the purpose, a cup and stem pessary. In the meantime ergot was prescribed in doses of $\frac{1}{2}$ 20 to $\frac{1}{2}$ 30 three times a day, for a week before each period. On November 29th, 1898, after a month of treatment, I was told that no relief had been obtained. The question of operation was now mooted. At that time I thought that myomectomy might be feasible. The question as to whether the patient could be safely allowed to run the risk of another pregnancy was also discussed. She was anxious to have another child, but it seemed to me undesirable, as it was by no means certain that she would have as easy a delivery as she had on the former occasion.

On February 6th, 1899, the symptoms had all improved, and the patient was looking and feeling very well. The tumour was quite above the pelvis. The sound passed $3\frac{1}{2}$ inches in a direction forwards and to the left of the tumour. It now seemed to me certain that if any operation were done it would have to be hysterectomy.

On April 15th, 1899, the husband reported that his wife had decided against operation, that marital relations had been resumed, and that, in spite of precautions, there was reason to believe pregnancy had occurred, as there had been no menstruation since February 8th to 11th. It was arranged for her to come up and see me later in the month, but in the meantime, viz. on April 25th, miscarriage occurred, and I have heard nothing of the case since.

CASE III. Large, lobulated, subperitoneal fibroids of uterus pushing the three months pregnant uterus to the right ; preg-

nancy allowed to continue; uncomplicated delivery at full term.—A. C., aged 37, was admitted into St. Thomas's Hospital on February 25th, 1899. She had been married for 5 years, and was now pregnant for the second time. The first pregnancy occurred four years ago, and ended in an early miscarriage. She had last menstruated three months previous to the date of her admission. Five weeks ago she had attended as an out-patient at a suburban hospital to obtain advice with regard to some hard lumps she had recently detected in the lower part of the abdomen. There had been no menorrhagia previous to the pregnancy, or any interference with the functions of the bowel or bladder. The lumps had not been painful. Dr. Umney diagnosed them as uterine fibroids, and, in view of possible complications, he decided to send the patient up to St. Thomas's Hospital for my opinion.

On examination of the abdomen, a swelling with the characters of a pregnant uterus was found lying to the right, and reaching from the pubes to the level of the umbilicus. There was a hard lobulated swelling in the left iliac region, extending upwards to a distance of an inch above the anterior superior spine of the ilium, and inwards so as to encroach on the hypogastric region. There was another hard rounded swelling, of smaller size, in front of the lower part of the uterus on the right side.

Examination *per vaginam* showed the cervix to be soft and directed downwards and backwards. Its canal was patulous, admitting the finger up to the first joint. What appeared to be the fundus uteri lay in the middle line, its summit being $3\frac{3}{4}$ inches above the symphysis pubis. On the left side there was a solid, slightly moveable tumour, depressing the vaginal vault, and extending outwards to the lateral wall of the pelvis. It could not be separated from the left border of the uterus and, being harder and more easily defined than the body of the uterus, it was thought to be an out-growth from it. The softer swelling on the right was entirely above the pelvic brim. Its lower part was felt to be hard, solid, and irregular. Its upper part was smooth, soft, and fluctuating. As pressure upon its upper surface did not convey the same direct impulse to the

cervix that was conveyed by pressure on what was believed to be the fundus uteri, and on the solid tumour lying in front and to the left, the nature of the swelling was at first considered to be doubtful. But a day or two later it was felt to contract and become harder during examination, and ballottement was distinctly obtained. Hence it became evident that the softer swelling was the pregnant uterus displaced to the right by the hard swelling on the left, and that what had been thought to be the fundus in the middle line was either a separate fibroid or a lobe of the mass on the left side.

The patient remained in the hospital for a fortnight, and was then sent out with directions to place herself under the supervision of Dr. Umney. Meantime I wrote to him explaining that as the fibroids were mainly, if not entirely, subperitoneal and did not displace the cervix, and as the probabilities were against their interfering with the normal course of pregnancy or labour, it was not considered necessary either to operate on the tumours or to arrest the pregnancy. The patient presented herself occasionally at the Hospital, but no such alteration occurred as seemed to indicate the need for interference.

On July 17th Dr. Umney reported that the head appeared to be presenting, and that the fibroids were out of the way. On the 31st of July there were indications that labour was commencing.

As Dr. Umney was leaving home next day for his autumn holiday, and his substitute did not care to have the responsibility of the case, the patient was sent into Queen Charlotte's Hospital, where she had a normal labour and made a quick and uneventful recovery.

CASE IV. Group of subperitoneal fibroids in a uterus six weeks pregnant but enlarged to size compatible with a pregnancy of five to six months; myomectomy advised; pregnancy allowed to go on; delivery of living child at term without complication.—On the 8th of March, 1899, I was asked by Mrs. Garrett Anderson to see a patient with her under the following circumstances:—The patient's age was 33. She

had been married about two months and a half, and as menstruation was now nineteen days overdue, she was presumably about six weeks pregnant. She had consulted Mrs. Anderson in November, 1897, when unmarried and engaged in teaching, on account of an aching and feeling of weight low down on the right side of the abdomen. No tumour was at that time discovered on abdominal examination. She had not been seen again until shortly after her marriage, namely, in February, 1899. There had then been no missed period, and there was no evidence of pregnancy, but the same symptoms were complained of as in 1897, and on examining the abdomen a tumour was now plainly to be felt, causing an enlargement equal in size to a three months' pregnant uterus, and apparently affecting the anterior uterine wall. When next seen, on March 3rd, menstruation was a fortnight overdue and the swelling was considerably larger. A second opinion had been taken and operation (myomectomy) advised, whereupon I was consulted.

The uterus was enlarged to the size of a five to six months' pregnancy. A solid, rounded tumour, 4 inches in diameter, was felt in the anterior uterine wall to the right of the middle line, lying immediately beneath the anterior abdominal wall and not pedunculated. *Per vaginam* two other smaller, hard, rounded tumours were found, one in front of the upper part of the cervix uteri, the other to the right and behind, somewhat higher up.

The question of myomectomy was discussed. The presence of other tumours besides the main one, and the doubt as to whether the tumours would really offer any obstruction to delivery, made me hesitate to recommend operation without further consideration. The chief danger of letting matters take their course lay, to my mind, in the risk of irregular contraction after delivery and *post-partum* haemorrhage. I suggested that another obstetric physician should be asked to see the case with me, as the decision was one of exceptional difficulty and responsibility. The husband, however, said that as there was evidently some reason to doubt the necessity for operation, he would prefer accepting the risk and avoiding operation. He further

said that he would never reproach us if the event proved unfortunate. The patient and her husband thereupon returned to their home in the country.

On the 20th of April the family practitioner came up to town, accompanied by the husband, to report that the swelling had undergone a very sudden increase in size, reaching up to the costal margins, and that the patient was in such severe pain as to necessitate the administration of morphia. I expressed the opinion that the symptoms were probably due either to alteration of position *plus* normal increase in the growth of the tumour, or to continuous and painful uterine contraction, the result of some concealed intra-uterine haemorrhage, in which latter case spontaneous abortion might be expected to follow. Meantime I advised that a vaginal examination should be made, in case abortion should be threatening, and that under any circumstances there should be as little interference as possible. I further recommended that everything should be in readiness for hot douching in case of need, and for packing the uterine cavity if douching failed, and I arranged to go down immediately if wanted.

Nothing more was heard of the case until November, when Mrs. Garrett Anderson very courteously forwarded me a letter from the patient's husband, in which he announced that his wife had been confined of a fine healthy boy on the fifth of that month, and that when writing, four days afterwards, he was able to report that she was doing wonderfully well. A trained nurse (he informed Mrs. Anderson) had been in almost constant attendance throughout the pregnancy, and the patient had always been carried up and down stairs, and had only been out of doors in a bath-chair. "I thought," the letter somewhat naively continued, "I should like to let you know what wonders a perfectly quiet life and Nature have done for my wife."

A few days later the doctor wrote to tell me that "luckily nothing untoward happened, there being practically no haemorrhage to speak of." He was rather alarmed for the first thirty-six hours after labour by the rapidity of the pulse, 120 to 140, and by a certain amount of blanching. Both these signs had improved. The tumour was then

(Nov. 13th) still large, reaching nearly to the right costal margin. As this paper is passing through the press, I learn that the patient, having become tired of her tumours, is about to have them removed by hysterectomy.

I append a table of all the cases in which I have thought an operation necessary. Three of them proved fatal; these have already been published in detail. The references are given in the last column of the table. Of the two cases of myomectomy, one (No. 2 in the table) was that of a doctor's wife (recently a hospital sister), who, being six weeks pregnant, had a pedunculated subperitoneal fibroid attached to the fundus uteri. As the tumour was the seat of considerable pain, and appeared to be capable of being easily removed, I advised that it should be taken away. This was accomplished without any injurious influence upon the pregnancy, which continued to term, and ended in the birth of a healthy child. When I last heard of the patient (March, 1900) she was in excellent health, and at about mid-term of her fifth pregnancy.

The other case of myomectomy (No. 5 in the table) was specially interesting from the point of view of diagnosis. The patient, aged 33, had been married four years. There was a history of one doubtful miscarriage a year previously. Otherwise there had been no previous pregnancy. She was first seen by me in consultation with Dr. Dysart McCaw, on September 29th, 1897. She had last menstruated May 22nd to 25th, 1897, and was therefore four months pregnant. Sickness had begun during the third week of June, and had, with short intervals, continued ever since. Six weeks previous to the consultation the sickness had become more constant, and the patient had been almost entirely in bed from that time, though during the last fortnight the vomiting had been less severe.

On examining the abdomen I found two tumours. One of these was soft and ill-defined, and was situated in the right inferior quarter of the abdomen, reaching upwards to within an inch of the umbilicus. This was evidently the pregnant uterus pushed to one side. The other tumour, situated on the left side, was hard, and reached much higher, dis-

Abdominal Section for Pregnancy

No.	Name.	Age.	No. of pregnancy.	Date of operation.	Hospital or private.	Period of gestation.	Indications for operation.
1	Mrs. H. (sent home from Gib- raltar)	35	1st	Oct. 6, 1892	Establish- ment for invalid gentle- women, Harley St.	22 to 23 weeks (married April 27; no men- struation since)	Had been taken seriously ill 6 weeks after marriage, and continued ill and in severe pain ever since. Large, lobu- lated, solid tumour filling up lower part of abdomen and upper part of pelvis; a softer portion of tumour at left upper corner, where foetal movements are felt; cervical canal greatly elongated, and displaced to extreme left.
2	Mrs. L.	32	1st	June 16, 1894	St. Thomas's Hosp.	7th week	Pain in situation of peduncu- lated subperitoneal fibroid, size of fist, attached loosely to fundus in front and to the right.
3	E. L.	43	13th	Sept. 13, 1894	St. Thomas's Hosp.	20 to 21 weeks	Large abdominal tumour block- ing up pelvic inlet; hard and lobulated to left and below; softer above and to right, where foetal heart is audible.
4	M. A. S.	46	5th	Oct. 10, 1895	St. Thomas's Hosp.	21 to 22 weeks	Large, solid, elastic, irregular abdominal tumour blocking up pelvic inlet and filling pelvic cavity; foetal move- ments felt in left portion of tumour.
5	Mrs. H.	33	1st	Oct. 6, 1897 (Mr. H. Morris)	Private	18 to 19 weeks	Large, solid tumour above, be- hind, and to left of pregnant uterus; thought to be retro- peritoneal and unconnected with uterus.

For case of fibroids complicated by *ectopic pregnancy*

complicated by Fibroids of the Uterus.

Nature of operation.	Result.	Cause of death.	Reference to full report of case or remarks.
Cæsarian section. Fœtus: female = 13½ in. long.	Death in 36 hours	Shock (no p.m.)	'Lancet,' June 16, 1894.
Myomectomy. Tumour 4½ in. Recovery × 3½ in., connected with uterus by peritoneum only.	—	—	Pregnancy uninterrupted. On Mar. 14, 1900 patient was about mid-term of 5th pregnancy, 2 previous pregnancies having ended at term and 2 at 10th week.
Cæsarian section, with removal of uterine appendages. Fœtus 11½ in. long. Tumour growing entirely from cervix.	Death in 18 hours	Shock. P.M.—Tumour 22 lbs., filling abdomen, growing from cavity, covered by peritoneum, derived from broad ligament and abdominal wall, both anterior and posterior. Uterus 12 in. long; body lay behind and to right of upper part of tumour	'St. Thomas's Hosp. Reports,' vol. xxiii, for 1894, pp. 470—474.
Abdominal hysterectomy, with intra-peritoneal stump, and removal of both ovaries and Fallopian tubes. Multiple fibro-myomata, the large one growing downwards into pelvis in a state of necrosis. Fœtus: female = 10 in. long. Uterine cavity not opened before removal.	Death in 48 hours	Exhaustion (no p.m.)	'St. Thomas's Hosp. Reports,' vol. xxiv, for 1895, pp. 472—476.
Myomectomy. Tumour a large pedunculated fibroid, 4 lbs. in weight.	Recovery	—	Pregnancy uninterrupted. See 'Obst. Soc. Trans.,' vol. xl, for 1898, p. 256.

appearing beneath the left lower ribs. It rested on the muscles of the back to the left of the lumbar spine as the patient lay on her back, but it did not cause bulging either in the flank or the loin. It could be tilted forward by the finger passed under the loin. There was resonance over the whole anterior aspect. The tumour was tender, but not painful. When the finger was placed on the cervix uteri, *per vaginam*, and the tumour was pushed upwards beneath the abdominal wall, no dragging sensation was imparted to the cervix, or other impulse given. The urine was free from albumen.

The possibilities that occurred to my mind were tumour of the kidney, tumour of the ovary, and pedunculated sub-peritoneal fibroid. I thought the most likely diagnosis was renal sarcoma. Upon my advice Mr. Henry Morris was asked to see the case. He agreed with me as to the tumour being almost certainly retro-peritoneal and unconnected with the uterus. He thought it was either a renal tumour or a retro-peritoneal lipoma. Being asked my opinion as to treatment, I told him that I thought the tumour ought to be removed without delay, leaving the pregnancy undisturbed. I did not think it would be wise to let the case go on without something being done, and to cut short the pregnancy would be to leave the patient with the more serious operation still before her. In this view Mr. Morris entirely concurred. The patient and her husband having given their consent, Mr. Morris opened the abdomen on October 6th, 1897. The tumour proved to be a large pedunculated sub-peritoneal fibroid, 4 lbs. in weight, lying behind and to the left of the uterus, and attached to the left cornu. The tumour was removed, and the patient made a good recovery without interruption to her pregnancy. She was delivered by Dr. Dysart McCaw, instrumentally, of a living male child, 10 lbs. in weight, on February 24th, 1898, and both she and the child did well.

The following case will illustrate my views as to the conditions under which alone marriage should be sanctioned in the case of patients with fibroid tumours of the uterus of such a kind as to make pregnancy dangerous.

On the 11th of October, 1899, I was consulted by an unmarried lady of 31, with an abdominal tumour which had been known to exist only for a few weeks, and about which no doctor had been consulted until a week ago. The letter that the patient brought from her medical attendant described the tumour as an ovarian cyst, and stated that, in view of her approaching marriage, my opinion was sought as to the desirability of an operation. I found on examination that the supposed cyst was a slightly moveable, soft, elastic, solid tumour, forming one of a group of fibroids connected with the uterus and with each other, pushing the os and cervix uteri towards the left, partially filling the upper part of the pelvis, extending an inch above the umbilicus, and causing a prominence of the whole of the lower half of the abdomen. I gave it as my opinion that the tumours were subperitoneal fibroids, and that, inasmuch as it would be unsafe for the patient to become pregnant, she ought either to break off her engagement and remain single, or to have the uterus removed before her marriage. I stated that the latter alternative would only be justifiable if the gentleman to whom she was engaged, having been made aware of the circumstances, and especially of the fact that she could never become a mother, gave his consent to the operation and expressed his readiness to fulfil his promise to marry her in the event of her recovery. The gentleman, on learning my views from the doctor, very naturally desired that another opinion should be obtained. The patient willingly consented to this, and her doctor took her therefore to see Sir John Williams. He was of opinion that she ought to break off the engagement and not have any operation. This advice, however, failed to commend itself to the patient, who desired me to undertake the operation forthwith. I insisted upon her taking a few days to consider the matter, and if at the end of that time she should be still in the same mind, I promised to accede to her request. At the end of the time specified, I was informed that there had been no alteration in her wish. I thereupon admitted the patient into the Hospital (for though well educated she was by no means well off), and on the 7th of December, 1899, performed abdominal

hysterectomy, leaving both the ovaries. The patient made a good recovery, and was married six months later. When I last saw her, in January, 1901, her health and spirits were excellent.

Postscript.—The following case escaped my recollection, or I should have included it in the foregoing table.

On July 3rd, 1897, I was asked by Dr. Glover, of Highbury, to see with him a lady, æt. 35, the wife of a medical practitioner. This lady had two solid abdominal tumours of considerable size, and had, for the first time since she had been married, missed two menstrual periods. Dr. Herman had seen her a few days previously, and, although he could not say with certainty whether the tumours were uterine or ovarian, he had expressed the opinion that they ought to be removed. It was on this question of operation that I was consulted.

The patient had been married ten years and had had no children. She had enjoyed good health until about five weeks previously, when she had first noticed some abdominal enlargement. Since that she had on two occasions suffered from retention of urine, and had had a good deal of pain in her back and thighs. I found that the uterus was pushed up against the left side of the pelvis, the cervix projecting normally. There was a solid tumour, equal in size to a foetal head at term, filling up the pelvis, depressing the vaginal vault, and extending upwards into the right iliac fossa. Another solid tumour lay higher up, between the costal margins and the crest of the right ilium. I expressed the opinion that the case was one of early pregnancy associated with tumours, that the tumours were either fibro-myomata of the uterus or solid (? sarcomatous) tumours of one or both ovaries, and that an operation was desirable.

A few days later Dr. Herman operated. He found the case to be one of pregnancy with fibroids. He first opened the uterus and removed the foetus, and then removed the tumours and uterus by abdominal hysterectomy. The patient made an excellent recovery.

SEPTIC THROMBOSIS OF THE CAVERNOUS SINUS.

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CASES of septic thrombosis of the intra-cranial venous sinuses are always of interest, and records of cases are rare in which the disease primarily affects the cavernous sinus. The notes of a patient who has recently been under my care in the hospital are perhaps worthy of a place in the Reports.

With the train of pyaemic symptoms which follow the extension to the lateral sinus of suppurative inflammation starting in the middle ear, we are now well familiar. It is, of course, a natural inference, that similar general results will follow septic thrombosis of a cavernous sinus; the difficulties of diagnosis, however, are at first sight greater in the latter class of case, mainly, no doubt, because examples of this class are much more rarely met with, while the difficulties of treatment are so insuperably greater, that at present it seems hardly possible to bring such a case to a successful termination.

Setting aside cases of non-infective thrombosis secondary to fracture of skull, we have two main causes of formation of clot in the intra-cranial sinuses, viz. marasmus and sepsis. The marasmic cases are rare, and are met with most often in

patients at the two extremes of life, usually as the result of prolonged exhausting diseases. The clot forms as a rule in the superior longitudinal sinus, more rarely in the lateral sinuses, and still more rarely in the cavernous sinuses. When examined *post mortem* the clot is dense, resistant, stratified, and non-adherent to the walls of the vein ; the brain area affected is likely to be œdematosus, the vessels congested, and innumerable minute haemorrhages are generally found in the grey cortex ; the ventricles may be distended with fluid, and exceptionally sero-sanguineous fluid draining into the orbit has caused some exophthalmos during life.

Infective thrombosis, in contrast, most often occurs in adults, rarely in old people, and only exceptionally in children. It usually affects one of the dual sinuses and not the single median or azygos sinuses. It is local in origin, secondary to some septic inflammatory lesion, and usually involves the sinus in the most anatomical proximity to the primary disease. Compound fractures of skull, or even septic scalp wounds without fracture may give rise to it, while otitis media suppurativa is the most frequent cause ; empyema of the sphenoidal air-cell at once suggests itself as a cause. Simpler lesions, such as ulceration of the mucous membrane of the nose, periostitis of maxillæ from carious teeth, tonsillar and retro-pharyngeal abscesses, have been responsible ; while specific inflammations such as erysipelas of face, carbuncles, and anthrax pustules, cellulitis and acute infective periostitis of orbit, have accounted for recorded cases. *Post mortem*, the clot which has formed on the inflamed walls of the sinus implicated is usually found disintegrated into pus ; there is no tendency to brain softening, while haemorrhages in the cortex are only rarely met with. If the patient has survived sufficiently long, purulent meningitis is almost sure to have developed, while pyæmic infarcts may have given rise to cerebral or cerebellar abscess, or purulent deposits in more remote parts of the body. On the signs which such secondary foci will show during life I do not propose to enter ; the reader can well recall them for himself, and can also, to complete the picture of the disease, fill in the general symptoms of pyæmia, many of which the case I record below exemplifies.

Mr. Kilvert, to whom I am much indebted, has kindly searched in the hospital records for cases of septic phlebitis of the cavernous sinus for the past twenty years. It is probable that not all the cases have been unearthed; the different classifications of successive registrars, and the various diagnoses under which such cases may have been entered, rendered the search a particularly difficult one. Mr. Kilvert has only succeeded in discovering notes of three such cases, and of these two were in children, so that it is obvious we should not lay too much stress on the question of age. In all three cases the primary disease was a suppurative otitis media; there was evidence *post mortem* of extension by continuity of the phlebitis from the lateral sinus primarily involved in the two cases where full notes were available, and in each of them the usual operation in the mastoid region with ligature of the internal jugular vein in the neck had been performed. Each during life had the local signs indicative of the cavernous sinus being involved; these signs are for the most part readily understood, when we recollect that the veins of the orbit drain into the cavernous sinus, and that the motor nerves of the eyeball and the first division of the fifth nerve are in intimate relation to its walls. The local symptoms may be briefly summed up by saying that on the affected side, we get a rapid development of all the appearances suggestive of cellulitis of the orbit: intense brawny inflammatory œdema and swelling of lids, very considerable proptosis of eyeball, chemosis of ocular conjunctiva, fixation of globe, pupil often dilated and moving imperfectly, tenderness on palpation, and an elastic feel very suggestive of fluctuation; a certain amount of muco-purulent discharge from the conjunctiva is often present. The pain is severe, but the patient, in a drowsy condition, often complains but little of it; supra-orbital neuralgia has been intense in some cases. My own patient developed a symptom which is to be observed in a large proportion of these cases, and one which makes the diagnosis from cellulitis of orbital certain; *i. e.* the local signs become bilateral; the eyeball and orbit of the opposite side begin to show changes similar to those on the side first involved; in some cases a slight abatement of signs on the original side accom-

panies this extension. Whether this be so or not, this extension of symptoms is quite diagnostic from orbital cellulitis, and indicates, of course, a spread of phlebitis by means of the circular sinus to the cavernous sinus of the opposite side. One other point on which some stress is laid in the diagnosis from cellulitis of orbit is the presence of œdema over the mastoid region, which is said to be likely to be present in the thrombotic cases only ; in cases originating in middle-ear disease this sign could hardly be relied on. I regret to say I omitted to make this observation on my own patient, though I had it in my mind to do so. I am not, however, inclined to attribute great value to this point. In thrombosis of the cavernous sinus, I should consider œdema of the retina with distended veins as more likely to be of use ; still this condition of retina is not necessarily present, even with a completely blocked cavernous sinus, if the ophthalmic veins remain patent ; the alternative channels of venous return are sufficiently free to prevent its development.

The anatomical venous connections of the cavernous sinus I take to play a very prominent part in the development and course of the disease, whose main pathological features are found in its phlebitis. By these connections we are able to explain the many diverse situations of the primary septic disease from which the cavernous sinus may become involved ; the same free communications afford so many alternative routes by which the blood may leave the cavernous sinus, that it seems vain to hope we shall be able, by ligature of the internal jugular vein, to prevent general pyæmia in these cases, as is now frequently successfully done when a case of septic thrombosis of the lateral sinus has to be treated. This ligature was applied, but without success, in two of the three cases we have discovered in the hospital notes, as each was a case primarily of infection of the lateral sinus from otitis media. Anteriorly the cavernous sinus receives the ophthalmic veins, the free communication of whose radicles with the angular vein is well known ; posteriorly it is drained by the superior and inferior petrosal sinuses ; internally it is put into free communication with its fellow of the opposite side by the anterior and posterior inter-cavernous sinuses ; externally it receives the so-called

spheno-parietal sinus by which connection with the middle meningeal vein is established ; while inferiorly through the foramen ovale, the foramen lacerum medium, and that of Vesalius, emissary veins drain the sinus into the pterygoid and pharyngeal venous plexuses. These two plexuses communicate together, and each drains into the internal jugular vein ; while the pterygoid plexus by the anterior internal maxillary vein has a free flow into the facial vein, and will communicate through the inner wall of the sphenomaxillary fossa with the veins of the nasal mucous membrane. At first this network of alternative venous channels sounds very appalling ; still, when the ultimate destination of all these veins is considered, it does seem likely that a ligature on the internal jugular vein low down in the neck ought to be tried. The most formidable feature of all is still the circular sinus joining the diseased sinus to its fellow ; spread in this direction almost always takes place, and it would be a bold step to tie the opposite internal jugular vein immediately on the symptoms pointing to this extension of the phlebitis, or even before, in either case a very short interval after the first internal jugular vein had been occluded by ligature. In my own case injections of anti-streptococcus serum were employed. I cannot record any appreciable benefit from this measure, and am not aware that it has previously been tried in a case of septic phlebitis of the cavernous sinus ; possibly with the internal jugular vein tied a better effect might have been produced, and if I had another such case under care, I should be inclined to try this combined treatment.

E. M—, æt. 22, female, domestic servant, was admitted to the hospital on September 22nd, 1900. Three days before she noticed slight pain at the inner side of the left eye, "she thought a stye was coming." On the 21st September, on account of great pain and commencing swelling and redness of lids, the doctor was called in. Towards evening she became worse, vomited, and her temperature was found to be 104° F.

On admission she said the pain had been so severe she had not slept for two nights ; it was now all over the head,

but was especially complained of at the back of the neck. She had had repeated vomiting. The temperature on admission was 101·6° F.; the tongue and mouth were coated with dirty white débris; the bowels acted after an enema administered on the morning of the 22nd, but had been confined for two days. The throat appeared healthy. Her diet had consisted of milk only.

On the left side there was much redness, and firm œdematosus swelling of both eyelids. Very considerable proptosis of eyeball—the globe appeared quite fixed; there was chemosis of ocular conjunctiva and slight muco-purulent discharge—the cornea was bright; the pupil was larger than that of the right eye, but not fully dilated; its action is not recorded. Through the brawny upper lid an elastic sensation could be felt; there was much tenderness on palpation. The right eye and orbit were perfectly normal.

There was no discharge from the ears, and the patient had been in every respect perfectly well up to the time of the present attack.

Regarding the case as probably one of cellulitis of orbit, at 4 p.m. on September 22nd, I had anæsthetic administered and incised deeply into the orbit through the upper lid. No pus was evacuated. I thought I felt some rough bone with a probe near the junction of the upper inner wall of the orbit. A drainage-tube was inserted and cyanide dressing applied. I took the opportunity of examining the right fundus with the ophthalmoscope and found it in all respects normal. The condition of the lids prevented the examination of the left fundus.

At 8 p.m. the same evening her temperature was 105° F. I ordered the dressing to be changed to one of hot boracic lotion every three hours; ordered her brandy and five grains of calomel.

At midnight the temperature remained the same. Pulse was 120, and it was noted that the right eyelids were becoming œdematosus.

Next morning, September 23rd, the right lids were more swollen; there was some œdema of ocular conjunctiva on this side, and no power of elevating this eye, all the other movements remaining intact. The condition on the left side

had not altered ; no pus had come through the tube ; there appeared to be a spot of most acute tenderness near the inner canthus.

The calomel had acted well. There was no improvement in the general condition. The development of symptoms on the right side made it clear that there was thrombosis of the cavernous sinus. Considering it possible that bone disease of the left orbit was the primary mischief, I had anaesthetic again given, and thoroughly explored the orbit, splitting the upper lid vertically, and incising also through the lower lid. The bare bone I thought I could still detect with the probe in the upper inner part of orbit. No pus was evacuated.

At 1.30 p.m. 10 c.c. of anti-streptococcus serum were injected in the flank, and this dose was repeated every four hours until 5.30 a.m. on September 24th, stimulants being freely given.

At 5.30 p.m. on the 23rd the right lids were less oedematous, and there was some upward movement of the right eyeball, but it was very incomplete.

At 9.30 p.m. the oedema of right lids and conjunctiva had again much diminished ; the eye was capable of movement in all directions ; the pupil was active, and Mr. Kilvert noted "no papillitis."

The patient gradually sank and died on September 24th at 10 a.m. ; the temperature rose to 107° F. just before death ; there was no change in the appearances of the left eye.

A post-mortem examination was made by Dr. Colman on the afternoon of the 24th ; he returned the case as one of septic thrombosis of cavernous sinuses, with local meningitis, but was not able to identify the source of infection. I can only suggest that it may have been an acute necrosis of left orbit, of which the small area of bone I felt at my operation was the evidence.

The body was well nourished ; there was great proptosis of the left eyeball.

The skull-cap and dura mater were natural.

On removing the brain there was no excess of fluid at the base.

There was some matting in the interpeduncular space, and some yellow thickening without definite pus formation over the left gyrus rectus and the right gyrus hippocampus, but no general meningitis.

No thickening along the optic nerves.

The cavernous sinus on each side contained puriform material, not specially offensive. The cerebral arteries showed some opacity, and one of the pontine arteries was distinctly thickened, suggesting syphilitic change. There was, however, no evidence of syphilis elsewhere, and there was a firm uninjured hymen.

The brain was otherwise natural.

The other sinuses, including the petrosal, were healthy.

Some haemorrhage in the left orbital tissues from the operations, but no pus. The ears and sphenoidal air-cell were quite free from disease.

In the heart there was a considerable amount of atheroma at the commencement of the aorta, and one or two patches on the anterior cusp of the mitral valve.

The lungs were normal and showed no signs of tubercle.

The above is an almost full reproduction of Dr. Colman's post-mortem report.

The cardiac changes were rather unusual in one so young. Dr. Colman considered them typically atheromatous and in no way suggestive of ulcerative endocarditis.

A recent account of the diseases of the cerebral sinuses will be found in MacEwen's 'Pyogenic Diseases of the Brain and Cord.' In the 'Transactions of the Ophthalmological Society,' vol. vii, will be found a paper by Dr. Sidney Coupland based on a case of thrombosis of the cavernous sinus. A table of a very considerable number of allied cases is appended, and illustrates well the various origins of this disease. Attached to Dr. Coupland's paper and table is an extended list of references that will be found of much assistance to any one interested in this subject.

ASEPTIC DRESSINGS:

AN ACCOUNT OF THEIR PRODUCTION AND ORGANISED
DISTRIBUTION IN ST. THOMAS'S HOSPITAL.

By EDMUND WHITE, B.Sc.,

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IN the 'St. Thomas's Hospital Reports' (vol. xxii), an account was given of the experience gained up to that period in the application of the process of sterilisation to the dressings employed in certain departments of the Hospital. Since then the use of sterilised dressings has been gradually extended until, at the present time, antiseptic dressings have been almost entirely displaced. It was only to be expected that this displacement would be gradual, for the change from antiseptic to aseptic methods involves, in the case of a large hospital, changes in procedure which cannot be accomplished at once, or even gradually, without the exercise of great care. At the outset the question of centralisation *versus* decentralisation had to be considered. The establishment of sterilising apparatus in each of the operating theatres, wards, and special departments of the Hospital would remove some of the difficulties which affect the supply of sterilised dressings in a large

institution ; for each department would know its own particular needs, and could more easily ensure the production of the right kind and quantity of material at the required time, than if each had to rely upon a central dépôt. This central dépôt must be adapted to meet a great variation in the demands upon its capacity, and it is quite conceivable that individual departments might be at times inconvenienced if their particular requirements clashed with the needs of the others. On the other hand, the installation of the large number of appliances which the decentralised principle renders necessary, would involve a very large preliminary outlay with a proportionately large cost for maintenance. There would also be a large amount of overlapping, leading to a waste of energy and material ; but the chief objection, apart from considerations of cost, is the obvious difficulty of securing uniformity and efficiency in the working of the apparatus. For although the sterilisation of dressings involves only the application of simple principles, which are now generally learnt at an early stage of their career by both nurses and students, its practical performance in an efficient manner demands some acquaintance with mechanical appliances, and a course of training in the manipulation of them. And this argument has the more weight at the present time because it is pretty generally conceded that the simpler forms of sterilisers in which "current" steam is employed are less efficient than those which employ "pressure" steam, and the latter are naturally more complicated in construction and working than the former. The question of efficiency is of vital importance in connection with any aseptic system, since failure to secure uniformly reliable results in the sterilisation of the materials vitiates entirely the results of the subsequent surgical operations. It becomes necessary, therefore, to have some simple and rapid method of checking the sterility of the dressings, so as to control the results of the machines and their operators. This is absolutely necessary, since a breakdown in efficiency may occur at any time as a result of incompetence or carelessness, or failure of a machine to deliver steam under the required conditions. Since this method of control usually

involves bacteriological examination, it can be performed more frequently, and therefore more efficiently, the smaller the number of appliances in use. Thus with a single large appliance even daily testing is easily carried out, whereas with twenty appliances it would become almost necessary to establish a special department for its equally efficient per-

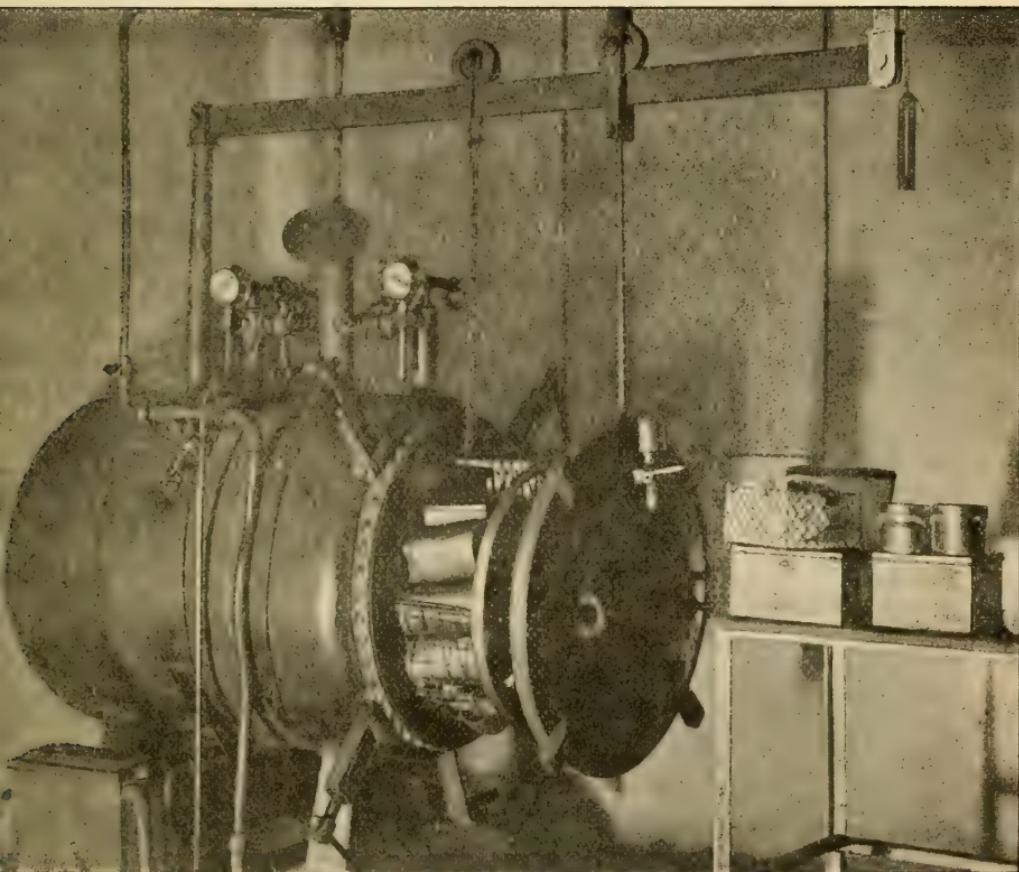


Fig. 2.—Steriliser for surgical dressings—door open to show tins in wire cage inside.
(Flashlight photograph by A. Mead.)

formance. For all these reasons it was thought most desirable to introduce, at least tentatively, a centralised system of sterilisation for surgical dressings, and a short account of the first installation will be found in a paper I contributed to the 'St. Thomas's Hospital Reports,' vol.

xxii. The reasons here advanced in favour of centralisation will not be found developed in that contribution, and, in fact, were hardly at that time (1894) fully realised. The gradual extension in the employment of aseptic methods has, however, enabled us to build up a system of supply which I believe works smoothly and efficiently with the minimum cost in working expenses. Within a year or two of its construction the first steriliser used in the Hospital, and which is described in the paper referred to above, was found to be too small for the demands made upon its working capacity, and in constructing a larger one, some useful experience obtained in the working of the first one enabled us to introduce some improvements in the second. Thus, some trouble had been found in turning out the dressings sufficiently dry after their exposure to steam. This was to a large extent remedied by adding to the first appliance a steam-ejector, for the extraction of moisture by producing a partial vacuum in the steam chamber after the completion of the sterilisation. This was found of great assistance; and in the second appliance a steam-jacket was also added, enveloping the sterilising chamber from end to end, so as to prevent the considerable condensation of water which takes place even in a chamber well covered by asbestos or other non-conducting material. The appliance now in use consists of a cylindrical steam chamber 3 ft. 9 in. by 2 ft. 9 in., with its axis arranged horizontally, this position being more convenient than the vertical.

A door at one end is supported by a wheel running on a rail above, so as to dispense with hinges, which would become strained out of their position by the weight of the door. Within the chamber is a cage running on wheels for the reception of the vessels containing the materials to be sterilised. Steam is supplied from a boiler in which the pressure is maintained at about 40 lbs. per square inch, this high pressure being necessary for the production of an efficient vacuum for extracting the air and moisture from the dressings. Since, however, this high pressure is not required either for the steam-jacket or the sterilising chamber, reducing valves are interposed on the pipes leading from the main steam-pipe to these, so that the

supply of steam is automatically checked when its pressure attains 15 lbs. to the square inch in the jacket and 12 lbs. in the chamber.

The vessels containing the dressings, with their lids loosened, are then packed in the wire cage, which is pushed into the chamber. After introduction the door is closed and screwed down tightly. Steam is then turned into the jacket and maintained at a pressure of 10 to 15 lbs. to the square inch during the whole of the subsequent proceedings. The object of this steam-jacket, which envelops the apparatus from end to end, is to prevent condensation of water in the interior chamber containing the articles to be sterilised, so that they may be removed in a fairly dry condition at the end of the process. The water which condenses in this outer jacket drains away through a pipe leading from the bottom into a tank, the escape of steam being automatically checked by a ball-valve, which rises and closes the orifice when steam attempts to pass. The next step is to remove the air from the interior of the disinfecting chamber, and the pores and interstices of the articles contained therein, so that the steam which is subsequently introduced may penetrate to the interior of these articles and insure their disinfection throughout. The removal of the air is accomplished by means of the steam-ejector or vacuum pump, which in the course of a few minutes produces a vacuum equivalent to a negative pressure of 20 to 22 lbs. to the square inch ; in other words, rather more than two thirds of the contained air is withdrawn. The ejector is now stopped and steam turned in, until a gauge in connection with the interior shows a positive pressure of 10 to 12 lbs. per square inch, the actual pressure being to some extent dependent upon the nature of the articles under treatment. The steam-pressure is maintained for twenty minutes, and the steam is then allowed to blow off through a pipe leading to the exterior of the building. The ejector is now again set to work in order to extract the residual steam, and when this has been accomplished air is admitted through a pipe until the pressure in the interior is in equilibrium with the external air. The air which is thus admitted is strained by being drawn

through a three-inch layer of tightly packed and freshly sterilised cotton wool, contained in a cylindrical cup attached to the end of the pipe leading into the chamber. The door of the apparatus is then opened, and the articles removed in a nearly air-dry condition. The time required for the whole series of operations described is about one hour.

It has been found that exposure to a pressure of over 15 lbs. of steam, which is equivalent to a temperature of about 112° C., damages such light fabrics as surgical gauze, and hence the pressure is kept at between 10 and 12 lbs., with results which have been found, by constant bacteriological examination, to be uniformly satisfactory. After sterilisation, the dressings, sealed up in their receptacles, are delivered to their destination by the attendant by means of a trolley specially constructed of metal, in such a way that it can be taken apart from time to time for thorough cleansing.

With regard to the containing vessels, experience has confirmed the suitability of tinned copper for their construction. Polished copper or copper nickel plated presents a superior appearance when the vessels are quite new, but daily use causes the surface to become tarnished, while the tinned copper is much less affected by use. Polishing the tarnished surface by means of plate powder and oil, etc., is objectionable, since it causes the introduction into the joints of foreign substances which may include septic material, while the labour involved in cleaning when some hundreds are in daily use is a serious consideration. Aluminium has been considerably cheapened in recent years, but it is still more expensive than copper, and very much softer, so that articles made from it easily become indented and misshapen by rough usage. Tinned iron or plain steel are quite useless for the purpose, becoming rapidly rusty and unsightly. Glass, which is easily cleaned and not affected by steam, is excluded on account of its fragility. The tinned copper vessels which have been found most useful are as follows:

1. Cylindrical canisters.

- (a) 4 × 4 inches.
- (b) 8 × 5 inches.

The smaller size is suitable for plugs, sponges, pads, and small dressings generally ; the larger size will contain an assortment of material for redressing a case after operation, or may be filled with only one kind of material sufficient for one or more operations.

2. Square boxes.

- (a) $10 \times 8 \times 6$ inches.
- (b) $14 \times 12 \times 10$ inches.

The smaller size is used for towels, or for a larger supply of bandages, etc., than the cylindrical canisters will contain, while the large size is employed for aprons, overalls, and other bulky articles. The lids of these square boxes are hinged and provided with a handle on top. They contain a closely fitting wire cage which serves several functions ; it keeps the materials from contact with the sides and allows the steam to have free access to the lower portion of the contents, and it facilitates the emptying and filling of the boxes. The lids fit tightly, and overlap the body of the box. After sterilisation they are closed and fixed with a wire fastening. The cylindrical canisters are provided with overlapping lids which fit loosely. After removal from the steriliser a layer of sterilised wool is interposed between the canister and lid, causing the latter to fit tightly. The object of the cotton-wool layer is to filter any air which enters the canister after its removal from the sterilising room, and this precaution is taken with the canisters because these contain, usually, materials which will come into direct contact with the wound, while the larger square boxes are used for towels, overalls, etc., which must subsequently in the ordinary course of events be exposed to air for a considerable time during their actual use. After sterilisation each vessel is sealed by placing over its lid an adhesive strip which bears the date of sterilisation. The dressings for sterilisation are prepared daily in the ward or department for which they are required, each being provided with a suitable supply of vessels. The average number of vessels for each surgical ward is :

18 large canisters.

6 small ,,

6 square ,,

For the theatres several dozen of each are required, while the medical wards require only a few canisters. The sisters prepare their dressings in the form in which they will be actually applied, so that the material requires as little handling as possible after sterilisation. They are delivered each day at given times to the sterilising room by the ordinary trolley-men, but *after* sterilisation are returned to their destination by the attendant who has sterilised them, and who has been trained to observe the necessary precautions for its proper performance, and is occupied in no other work.

The room in which the sterilisation is accomplished has been arranged with a view of excluding air laden with micro-organisms, and particularly the diffusion of air from the interior of the hospital. This is accomplished in the following manner :

The room selected for the purpose is situated in the basement between Blocks 5 and 6. It has one wall adjacent to the area, from which its light and air are derived. It communicates with the basement corridor by means of a passage closed by a tightly fitting door at each end. In the side of the room adjacent to the area a shaft, one foot in diameter, is provided. An electrically-driven fan revolves in this, and forces air from the external atmosphere into the room. A double screen of cotton wool is placed in the shaft, so that the air is strained during its passage, and this screen is changed daily. The fan is kept at work while sterilisation is in progress, so that a current of air from the external atmosphere is passing through the room and passage into the interior of the building. This serves the double purpose of reducing the temperature of the room to working limits, and preventing the ingress of air from the hospital corridor, into which the passage leading from the room opens. The door from the room to the passage fits as near perfectly as possible, and the air forced into the room by the fan escapes from the room into the passage by an aperture in this door which is also provided with a cotton-wool screen. At the far end of the passage which opens into the basement corridor another tightly fitting door and screen is provided, so that direct communication

between the sterilising room and the corridor is cut off by the two doors and the intervening passage. At night, and at intervals during the day, when the room is not in use, the fan is stopped and the two doors are closed. Passage of air by diffusion, or displacement of air by variations of external and internal temperature, can then only take place through the cotton-wool screens in the shaft and doors, so that the air in the room should at all times contain a minute quantity, if any, of floating particles. The room has no communication with the exterior except those described, the apertures through which the necessary pipes enter and leave the room being tightly sealed up. The door has no panels, and the frame is set flush with the interior wall. The windows are composed of large panes of glass set in an iron frame, also flush with the walls; and the walls and ceiling are covered with a specially prepared paint, which resists the action of water, and has a glassy surface. There are no angles and ledges for the reception of dust, and during each operation, and while the dressings are in the steriliser, the attendant flushes the whole interior by means of a jet of water, which drains away very quickly, because the floor slopes uniformly towards one end of the room. The attendant wears a pair of clogs while engaged in the room, in order to avoid distributing the dirt and *débris* from his boots over the floor, which is necessarily more or less wet. These clogs he leaves at the door at his exit, and resumes them when returning to the room, and since they are not worn outside the room they leave no muddy traces on the wet floor, which always occurs when a person walks over the floor with ordinary boots on. The walls, floors, and ceiling of the intervening passage are finished off in the same manner as the room itself, so that it serves to isolate the room from the interior of the hospital. With each batch of dressings the attendant places in the steriliser a supply of cotton wool for covering the mouths of the canisters, and an overall and pair of cotton gloves for himself. When the door of the apparatus is opened at the conclusion of the operations, he dons the overall and gloves before removing the dressings, so as to avoid any contact between his hand or clothes and the sterilised articles.

The method of control is as follows:—A portion of some material is selected at the discretion of the resident assistant surgeon, of such a size that it may be introduced into a wide broth tube with the least possible manipulation. This is removed by the director of the Clinical Laboratory from the containing vessel immediately after breaking the seal, introduced by him into the broth tube, and incubated with the usual precautions. The day or time for performing this control test are unknown to those responsible for the sterilising, and the results, having uniformly indicated sterility in the selected test objects, may be considered highly satisfactory.

ST. THOMAS'S HOSPITAL SURGEONS,
AND THE
PRACTICE OF THEIR ART IN
THE PAST.¹

*A Record from the Re-endowment by King Edward VI up to the
Opening of the New Hospital at Westminster Bridge.*

By HENRY BETHAM ROBINSON, M.S.LOND., F.R.C.S.,
ASSISTANT SURGEON.

WITH only a slight interval between the years 1608–1619, there are complete Hospital records since 1556, which it has been my privilege to have access to. During the early part of this period it is extremely difficult to decipher some of the entries, but I have been able to extract, I think, a fairly complete list of the surgeons from the above date.

It may not be superfluous to state the position of the Hospital about this time. Between the years 1538 and 1549, Henry VIII seized the religious houses, and on July 15th, 1538, the Hospital was surrendered to the King by Nicholas Buckland, the Master. As the result, a great number of aged, poor, lame, and indolent persons, and wounded soldiers from the armies in France, were without an abode, which soon led to serious inconvenience. After representation from the City authorities, Henry proposed granting to the City, St. Bartholomew's, the Grey Friars, and St. Thomas's Hospitals; for the latter he proposed the name of

¹ This paper was delivered as the Presidential Address before St. Thomas's Hospital Medical and Physical Society, October, 1900.

the “Hospital of the Holy Trinity,” and it was to have been exclusively set apart for the reception of lame, wounded, and diseased soldiers. But before this came about, in 1547, Henry died, and the re-endowment of the Hospital devolved on his son King Edward VI. As the citizens were desirous of possessing the Hospital, the Lord Mayor and Court of Aldermen purchased of the King the Manor of Southwark, which included the site of the Hospital, and immediately commenced to repair it for the reception of the sick ; the charter of purchase bears date April 29th, 1551. The Hospital was opened in November 1552, and provided for two hundred and sixty “wounded soldiers, blind, maimed, sick and helpless objects.” About a month before the end of the King’s reign, he incorporated by a charter bearing date June 6th, 1553, the Lord Mayor and Commonalty of the City of London as perpetual Governors.

In this account of St. Thomas’s surgeons, frequent reference will be made to their association with the Barber-Surgeons’ Company. Before the year 1540 there was in the City of London a Guild of Surgeons ; in this year, however, this Guild was incorporated by Act of Parliament with the Barbers Company, forming the United Company of Barber-Surgeons, having the privileges and formalities of the other City Companies.

The first entry of the appointment of a surgeon is in 1560, when Thomas Pratt obtained the post, and very shortly afterwards, on December 31st, 1561, occurs the first mention of an apprentice.

Thomas Gale, a surgical writer of this period, who in 1563 published “An institution of a Chirurgian conteyning the sure Groundes and Principles of Chirurgiary moste necessary and mete for all those that will attayne the arte perfectly,” complains, after witnessing the surgical practice at the Royal Hospitals of St. Bartholomew and St. Thomas in 1562, that “it was saide that carpinters, women, weavers, coblers, and tinkers, did cure more people than the chirurgians.”

Thomas Pratt held his post until October 8th, 1566, when Robert Garbutte was appointed for one year on approval, “to be continued afterwards if he was satisfactory.”

In 1567 Richard Wood and John Brygge became sur-

geons, and Edmond Gill had a reversion promised to him. On March 7th, 1568, Gregory Joye, a Barber-Surgeon, is appointed in the place of Robert Garbutte deceased, "conditionally that the said Garbutte's wife should have from Joye certain monies due."

On March 25th, 1569, William Gale succeeds John Brygge, and on May 2nd, Oliver Warbeck is appointed vice Gregory Joye, "until Midsummer next coming, and upon his well-doing, if it shall please the Governors then to like well of his diligence and service, to continue longer in the same room," etc.

On September 20th, 1574, William Crowe became surgeon in place of Oliver Warbeck.

Of all these early surgeons, I cannot trace anything else except these facts of appointment and retirement.

In November, 1583, William Pickering was a suitor for the post of a fourth surgeon, and came with a letter from the Hon. Mr. Secretary Walsingham, asking for this favour. The Court, however, decided that for the Secretary's sake, he is to have preference before any other. There is no further reference to his name on the available records, and he probably never was appointed. In December of the same year John Griffin, a surgeon, was a suitor, and brought in his favour a recommendation from Mr. Sergeant Balthorp, the Queen's Majesty's Surgeon; but although he was to be remembered when there was a vacancy, there is no record forthcoming of his appointment. This John Griffin was probably an apprentice to Richard Ferris, Serjeant-Surgeon to the Queen, and predecessor of Balthorp.

At the June Court 1585, Thomas Crowe, son of William Crowe, surgeon, was a suitor for a reversion, and he was to be favourably considered. His appointment soon followed on the death of his father, in April, 1587, when "he is admitted to use and exercise the same during six months next now ensuing, and that upon further trial and report of his well doing he is to be admitted and allowed one of the Surgeons of the House."

William Crowe was a distinguished Barber-Surgeon; he was Warden of the Company in 1576, 1579, and 1582, and Master in 1585. In their annals we find (13th November,

1567), “Yt ys ordayned that Wyllyam Bull, Chrystofer Swalldell, William Crowe, Wyllyam Grene, Henry Rankyn, and Leonard Coxe, is elected to be of the clothynge and Lyvery, and that theyre hoods shalbe by the Mr. for the tyme beyng put upon theyre shoulders within the p'lor one Chrystmas day next ensuyng before the company go to pawles to weyghte on the lorde mayor, unto the old usuage in that behalfe provyded accordyngly.”

From the following, dated April 2nd, 1596, we must suppose that the surgeons of that date had some meals in the Hospital, for it is ordered “that the Surgeons . . . be allowed Ham for this year for their Breakfast in the Easter hollydaies, but this to be no precedent for the like hereafter.”

In May 1597, Thomas Gale, sonne of William Gale, one of the surgeons, was a suitor for a reversion. He is informed it is against the orders to make any such promise, “but for that, there is a good opinion . . . of him, he is required to continue in the exercise of Surgery, as he had done . . . and he would be favourably considered.” He is not again mentioned, and seems never to have been appointed.

Richard Wood, one of the surgeons, on August 3rd, 1604, made the same request for his son, and he is told he will be favourably considered. When Richard Wood severed his connection with the Hospital is not to be found. He was Warden of the Barber-Surgeons in 1582, 1585, and 1588, and Master in 1591.

On January 11th, 1605, Thomas Crowe’s decease is reported, and of him there is nougnt further to note; and James Mullins is elected.

On February 19th, 1606, Henry Blackley applied for a reversion to the office of his said Master, William Gale, and was subsequently appointed, but the date when is doubtful.

There is now a break in the Hospital records from 1608—1619.

From the ‘Barber-Surgeons’ Annals,’ William Gale died in 1610 during his second term of office of Master. His connection with the Company seems to have extended over many years, for he was Warden in 1583 and 1590, and Master for the first time in 1595. He was also Examiner of Surgeons. He was buried at Monken Hadley, in the

chancel of which church is a brass to his memory. His son—Mr. John Gale of Bushey—by his will, dated August 13th, 1655, left to the Barber-Surgeons £16 per annum, payable out of certain houses on Snow Hill, in the parish of Saint Sepulchre, for the founding of an Anatomy Lecture in the name of Gale's Anatomy. This trust was transferred to the Surgeons' Company in 1745. The lectureship still exists at the Royal College of Surgeons, but it has been joined with a similar bequest left by Edward Arris, alderman and surgeon, in 1645, and is now known as the Arris and Gale Lectureship.

From some notes, difficult to decipher, it is probable that there was a surgeon of the name of Martyn; this would have been Thomas Martyn, who was Warden of the Barber-Surgeons in 1602, 1604, and 1607.

By a minute, dated July 12th, 1622, “£3 is given to Mr. Frederick for cutting Walter Johnson, a poor boy, for stone.” This seems to have been Christopher Frederick, Warden of the Barber-Surgeons in 1604, and Master twice, in 1609 and 1616. He was Serjeant-Surgeon to King James I, and served with the king in Spain in 1605. He appears to have had serious disagreements with John Gerard, the author of the famous ‘Herbal,’ and other members of the Court of the Barber-Surgeons, who were not friendly to him “as he was an alien born.”

Mr. Fleet was appointed surgeon on July 12th, 1622.

“On November 24th, 1633, Mr. Enoch Bostock, citizen and chirurgeon, and Mr. James Mullins or Molins, one of the surgeons at the Hospital, on behalf of Edward Molins, came to the Court, and a letter from the King’s Most Excellent Majesty to the President and Governors of this House on behalf of the said Enoch Bostock further was read. This Court, taking consideration of both said suits, and being willing to fulfill his Majesty’s Royal pleasure for the said Enoch Bostock, and also to make good what was implicitly promised to the said Mr. Molins at a Court holden on November 3rd last past, advised and order that if the same James Mullins, the father, happen to dye before Henry Blackley or Edward Fleet, Edward Mullins to be-

come surgeon in his father's place ; but if one of the others dye, Enoch Bostock takes the place."

We find other instances of this method of appointment ; for at the Court on February 8th, 1635, after confirming their decision of 1633, we find William King, Barber-Surgeon, was a humble suitor for the reversion of a surgeon's place of this house, unto whose suit, and by the instance and request of the Lord Chief Justice Brampton, this Court doth yield and order as followeth, viz. : " That if the same James Mullins or Edward Mullins shall happen to dye or resign or their office otherwise to become void living the said Henry Blackley and Edward Fleet That then the said William King shall have a surgeon's place in this house in reversion Or if the said Henry Blackley or Edward Fleet shall happen to dye living the same James Mullins or Edward Mullins the said Enoch Bostock being dead or having resigned or being avoyded of his reversion granted as aforesaid Then the said William King to be immediately admitted to take benefitt of this his grant of the reversion after any such avoydance Or lastly if either the said James Mullins or Edward Molins doth survive the said Henry Blackley or Edward Fleet by whose death or avoydance first happening the said Enoch Bostock hath his turne freed then the said William King shall have his first reversion after the death or avoydance of the said James or Edward Mollins or of the said Henry Blackley or Edward Fleet or any of them."

The next minute, dated October 22nd, 1638, seems to be first reference to the introduction of Specialism at this Hospital. "At this Court Thomas Holliard (apparently Hollyer, from subsequent accounts) chirurgeon is confirmed surgeon of this house for y^e curing of scald heads within this house and to have yearly for his paines and charges in and about the sum of £20 by quarterly payments, the same place with the same fee to be by him held and enjoyed as long he shall behave himself to the good liking of the Governors of this house for the time being or the most part of them and not otherwise and he to be paid after that rate for the time he hath served in this house which was three quarters of a year at Michaelmas last."

At the same time also, upon the petition of y^e three ancient chirurgeons of this house for some increase of wages or salary yearly, in respect of y^e great number of poor increased for cure within this house, this Court does not think fitt to grant their said suite, but doth order that each of them shall have forthwith paid unto them £5 as a free gift from this house."

In 1639 James Molins died. He was also Surgeon to St. Bartholomew's for cutting of the stone. He was Warden of the Barber-Surgeons in 1625 and 1626, and Master in 1632. His son, Edward Molins, who also obtained his father's post at St. Bartholomew's for "cutting for the stone," succeeded him.

In the same year, January 23rd, at this Court came William Clowes, Esq., Serjeant-Surgeon to the King's Most Excellent Majesty, and brought a letter from his said Majesty (now read) on y^e behalf of Lawrance Lowe (or Loe), surgeon, that the Court would give him the reversion of an appointment. This petition was granted.

On July 30th, 1640, the Court agreed to give the three ancient surgeons £4 per year more to their former salary of £36.

February 12th, 1641.—Thomas Hollyer, on his petition, is granted a surgeon's place after Mr. King and Mr. Lowe have become possessed of theirs.

From another source we find Edward Molins at loggerheads with the Company of Barber-Surgeons.

On November 20th, 1640, a dispute between Edward Molins and one Coppinger was heard by the Court, when the decision was against Molins, and he was find for using bad language.

"On 12th January, 1641, Edward Molins came into the Court, and stood in the face of the Court with his Hatt on his head and his Armes on his side and told the Court he would doe noe obedience to the Company, and swore God's wounds he would submitt to noe man living."

On January 15th Molins was fined 40s. for this contempt. ('Annals of the Barber-Surgeons,' p. 217.)

This very independent gentleman was soon otherwise employed in the Parliamentary War.

Returning to the Hospital, on August 11th, 1643, upon the humble petition of Mr. Blackley, Mr. Fleet, and Mr. Hollyer (for Mr. Molins, away at the War), the three surgeons of the house, for some gratuity or recompense for their extraordinary labours in dressing and curing many soldiers brought into the house out of the Parliamentary Army wounded and sick, It pleaseth the Court to order that £10 should be forthwith paid to them by the Steward of the house in satisfaction of their said extraordinary pains.

Of the Court held January 25th, 1644, occurs the following minute :—“Whereas an order of the honorable House of Commons assembled in Parliament of the 15th day instant, January, was yesterday received by the President and Treasurer touching a recommendation from the said house to the said President and Governors to displace Edward Molins, one of the chirurgeons of this House, from his said place for that he was lately taken at Arundel Castle in Armes against the Parliament, and for the placing of one Henry Clodd, Surgeon, in his place, etc.” With all due obedience Edward Molins was displaced, but the Court could not oblige the Parliament in their second wish, but prayed them to confirm the appointment of Thomas Hollyer, who had been for fourteen years at the house, and was formerly a servant to an ancient surgeon to this Hospital. Mr. King petitioned for the place, for which he had the reversion, but, as he had been appointed to St. Bartholomew’s, he was not considered. Laurence Loe was also passed over, but his reversion was reconfirmed after Mr. Blackley, Mr. Fleet, and Mr. Hollyer. To satisfy the Parliament a reversion was given to their candidate, Mr. Clodd. Also, at the suite of William King, surgeon, on behalf of Giles Hicks, his son-in-law, recommended also by letter from the Rt. Hon. Robert Earl of Warwick, Lord High Admiral, another reversion was promised.

After some four years we find some of these promises realised, for, on June 14th, 1648, Lawrence Loe becomes surgeon in place of E. Fleet, deceased, and Mr. Clodd, in place of H. Blackley, deceased. About Edward Fleet no more can be recorded, but Henry Blackley was a distin-

guished member of the Barber-Surgeons' Company, Warden in 1633 and 1634, and Master in 1637.

Lawrence Loe did not hold his post for long, as he resigned in 1649, Giles Hicks succeeding to his reversion, but his name is found in office at the Barber-Surgeons some time afterwards—Warden 1653, 1655, and 1658; and Master in 1667.

At this time the Court passed a much-wanted resolution, “That no reversion of any officer's place of this house shall hereafter be granted to any person or persons whatsoever, as has been formerly ordered and resolved.” Accordingly, the ready petitions of Thomas Allen, William Watson, Bartholomew King, Citizens and Barber-Surgeons, for reversions, were not granted.

At the suite of Henry Clodd, one of the Surgeons, and recommended by the House of Commons, on May 9th, 1649, leave was given to him to go to Newcastle, evidently to join the Parliamentary forces. He resigned his hospital post on February 8th in the next year, and there we lose sight of him; at the same time William Watson appeared in person, and was elected Surgeon in open Court.

The next appointment is that of Thomas Allen on August 20th, 1652.

On July 20th, 1660, a letter from the King's Most Excellent Majesty was read on behalf of Edward Molins, Citizen and Barber-Surgeon, and late Surgeon, for his reappointment. The Court (willing to yield with all due obedience to His Most Royal Highness, and yet withhold not to bring a new charge (?) by employing four surgeons) doth declare that he be readmitted to Cut for the Stone and the ordinary cures. But as to his pay for both, and the pay of the other three surgeons, the Court thought fit that their former pay, £40 for ordinary cures and £15 for cutting for the stone, be lessened to £30. In the same December Edward Molins, on his petition, was replaced in that position as he was when sent for by the late King's Majesty to York in 1644.

On March 8th, 1661, the following minute occurs—“Also whereas at a Court holden the 25th day of January, 1643, Mr. Edward Molins, late before one of the three Surgeons

of the house, was displaced, And at a Court holden January 29th Mr. Thomas Hollyer was elected Surgeon in his roome and hath soe continued ever since until at a Court holden the 7th day of December last the said Mr. Molins was restored to his said place in the same state so he was in 1641 (at which time he was by letter from his late Majesty to this house sent for to go to York to attend his said Majesty) Now at this Court (after long debate and mature consideration) it was in fine put to the question or vote whether to have four Surgeons for ordinary operations for a time or but three as antiently, and it was carryed in the Affirmative And thereupon the said Mr. Hollyer is continued a fourth Surgeon and to receive a salary equall with the other three Surgeons for ordinary operations from Christmas last This order to continue in force till one of the four Surgeons happen to dye And then the three Surgeons of them to stand and continue Surgeons as formerly And noo fourth Surgeon at any time then after to be elected or admitted nor this to be any President for future times soo to doo."

Towards the end of 1663 Edward Molins died, and in November, on the recommendation of the King's Most Excellent Majesty, his son, James Molins, applied to be elected Surgeon. As there were four Surgeons there was no vacancy under the ruling of March 8th, 1661. A Committee of Governors "are desired to go to Mr. Watson, one of the Surgeons, to treat with him as to his resignation of his place, because he is and long bath bin lame and not able to goo abroad." Mr. Watson does not appear to have fallen in with their wishes, for on the 6th of November, 1663, we find "James Molins is elected Surgeon as to ordinary operations in this house But as to the operation for the Cutting for the Stone, it is ordered (and by him freely consented to) that he and Mr. Hollyer (one of the Chirurgeons formerly employed in that operation) doo perform that operation for Cutting for the Stone (beginning at this house at Christmas next for a year) joynly It is also declared that the election of said Mr. Hollyer in 1643 was faire free and loyall. And it is lastly voted and ordered that upon the death of any

one of the four present Surgeons the number be reduced to three as it antiently was."

On Friday, December 2nd, 1664, comes a petition from the Lords and others of His Majesty's Privy Counsell touching the reception into this house of such as happen to be still maimed or wounded in His Majesty's now service. After hearing two of His Majesty's Commissioners the Court decided to provide "by Monday next" 120 beds, "and the Surgeons to cleare the house of such as have long been therein or are incurable." (An order such as this at the present day would be rather an insurmountable task to a resident officer.)

Mr. William Peirs is elected a Surgeon on February 9th, 1665, on the recommendation of the Right Honourable the Lord Mayor, in the place of Thomas Allen, deceased. The latter had been Warden of the Barber-Surgeons in 1649, 1651, and 1654, and Master in 1659. Of William Watson, who had been Warden of the Barber-Surgeons in 1657, we do not get any further information as one of the Surgeons. On January 26th, 1647, it is recorded,¹ "William Watson, having his letters of admittance and not sealed the Bond according to the ordinance in that behalfe, did amongst other uncivill behaviour and words to our Master and the Court say, 'That he would not be whip'd by a Bond and that he would give his answer at his own convenience.' And when our Master told him 'That he must seale the Bond,' he answered, 'That must was for the King.' But the Court gave him a fortnight to give his answer peremptorily."

"Also this Court being informed by one of the Governors now present of the good service done to this house by Edward Rice, Citizen and Barber-Chirurgeon of London, in attending, dressing, and curing some officers of this house and many patients therein of the disease of the plague with good success, to the hazard of his life, all the other Surgeons refusing to intermeddle therein, It pleaseth this Court to appoint the sum of £20 to be paid unto him forthwith for such his pains, care, and hazard taken and undergone. And it is further ordered that upon the first vacancy

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of a Surgeon's place in this house it be remembered that hee be then taken into further consideration as to a Chirurgeon's place here for this now good service done."

In 1666 the finances of the Hospital would seem not to have been very satisfactory, for having promised to take in the Seamen and Souldiers of Warr, it is brought to the notice of the Commissioners that there is a loss in the Tenements of £600 per annum, and that there will be difficulty in carrying out the promise.

There is nothing to record now until December 3rd, 1675, when the relations between the medical officers appeared to be strained, for "Complaint being made to the Court by Dr. Torlesse, the Doctor of this house, against Mr. Mollins and Mr. Hollier, two of the Chirurgeons of this house, for their non-observance of the orders of the house to the prejudice of the cures of the patients in this house. It is ordered that the Treasurer and Committee last named doo call the said Doctor and all the Chirurgions before them and examine the matter complained of by the said Doctor, and inform themselves of matter of fact and to (?) how things between them may be best managed in order to the most benefitt of the poore patients, and report their proceedings and opinions to this Court."

On June 21st, 1683, Mr. Perse resigned, and Mr. John Browne was appointed. William Perse was a Barber-Surgeon Warden in 1674, 1675, and 1676, and Master in 1679.

On the same date Mr. Edward Rice was made an Extra Chirurgeon, on account of his looking after plague patients in the Hospital when the other chirurgeons withdrew from such hazardous task, and also because he lived near. On a vacancy it was decided to revert to three chirurgeons afterwards.

There is no statement in the Hospital record as to how long he held his post, but from subsequent accounts it does not appear to have been for long.

The exact date of Hollyer's resignation, and his direct successor, does not appear in the records. Having been Warden of the Barber-Surgeons in 1664, 1665, 1666, he was Master in 1673, so he probably left the Hospital after the latter date.

James Molins was Surgeon in Ordinary to both Charles II and James II, and made an M.D. Oxon. in 1681. He died in 1686, and was buried at St. Bride's, Fleet Street.

These two vacancies from the succeeding context were filled by the election of Mr. Elton and Mr. Court.

Mr. John Browne was born in 1642, probably at Norwich, where he spent his early life. He was of a surgical family, being, as he says, "conversant with chirurgery almost from the cradle, being the sixth generation of my own relatives all eminent masters of our profession." He was acquainted with, but not related to, Sir Thomas Browne, the author of the 'Religio Medici,' the latter writing commendatory prefaces to his namesake's works. Browne was a pupil at St. Thomas's under Thomas Hollyer, and after that served in the navy for a time. In 1677 he published a work on Tumours, and in the following year he came to London, and was made Surgeon in Ordinary to Charles II, and it was on the King's recommendation he was elected to the post of Surgeon. He was a well-educated man, a good anatomist, and probably a good surgeon. He wrote a notable work, 'Charisma Basilicon,' or an account of the Royal Gift of Healing, where he describes the method adopted by Charles II for touching for the King's Evil, which was naturally, from his official position, extremely flattering of the King's virtue. Among other works he wrote a treatise on the muscles, with plates, which was probably the first book in which the names of the muscles were printed on the figures.

Browne's easily-gained office was not long enjoyed by him, for, on May 26th, 1691, we have the following minute on an Inquiry into the Orders of the House. "That we read over the abstract of orders and inquired how every one was kept or broken: And some of us having observed great animosities between the Surgeons, and the Committee hearing complaints against them, they did accuse one another, and we spent several Committees in hearing them and their witnesses, And after hearing all they could say we were of opinion That every of the four Surgeons, Mr. Browne, Mr. Elton, and Mr. Court, principall Surgeons, and Mr. Pepper, Assistant Surgeon, (when he was appointed is

not stated in the records) are guilty of a breach of the orders and neglect of their duty to the great prejudice of the patients, And we humbly consider that the cause thereof has been occasioned by the methods by which they came into their places, every one having been chosen or placed either with regard to recommendatory letters or by mandamus, as in the time when governed by Commissioners,¹ which had made some of them say often, That they were not chosen by the Governors and therefore were not to obey them or to that effect And for the prevention of the breach of the Orders concerning consultations and extraordinary operations which is of so great moment to the patients We humbly propose that for the future all the Surgeons go together every Monday and Thursday mornings from ward to ward and begin to dress their respective patients in each ward at one and the same time and so go from one ward to another till all be dressed in the presence of all the Surgeons (and the doctor, if he pleaseth) by which extraordinary cases be discovered to all of them." At the same time the Committee passed the following resolutions :—"To the intent that the House may be supplied as formerly with able Surgeons, that none be admitted a Surgeon but such as have been examined and approved by the Company of Surgeons as according to Law." "That none be permitted to dress for or under any Surgeons in this House but such as are bound apprentices at Surgeon's Hall for a term of seven years at least, and have served two years of that time in presence of his Master, and except such as shall be approved by the Committee of Governors."

On July 7th the Court resumed the debate on the Committee's report with regard to the Surgeons, and came to this resolution :—"That what the Committee had reported about them with the several charges proved

¹ During the reign of Charles II and James II many municipal corporations were brought under their control, and their charters revoked. The government of the City and the management of its property was handed over to Royal Commissioners to administer in 1683. Among these was St. Thomas's, of which the Lord Mayor and Corporation were the perpetual Governors, as by Charter of Incorporation of June 6th, 1553. The Commissioners retained their power until the Revolution in 1688, when such rule was abolished.

against them was a sufficient ground for the Court to proceed to a new Election of Surgeons, And therefore, the Court agree to elect presently three Surgeons and no more (that number being the ancient and constant number till of late and so agreed to upon the report of the Committee at the last General Court). And thereupon Mr. Browne, one of the present Surgeons, was called in and being told the same resolution as to a new election he said he submitted and prayed the Court's favour; they all did the same, Mr. Court, and Mr. Elton, and Mr. Pepper, Assistant Surgeon." The Court, however, hardened their hearts and thereupon elected Mr. Samuel Smith, Mr. Ridout, and Mr. Coatsworth, Surgeons. At the same time it was ordered, "That one of the Surgeons shall come every of those days in the week (they are not all to meet) at a certain hour in the morning and visit their patients in the Hospital."

Of Mr. Court I can get no information, and he apparently was not of much note.

On August 4th, 1692, Mr. Samuel Smith having died—concerning whom I cannot trace anything further,—Mr. Browne appealed to the Lords Commissioners of the Great Seal to be reinstated, but the Governors were not going to be dictated to, and later (on January 13th, 1693), they appointed a Mr. Thomas Elton. (It is doubtful whether this was a reappointment of the former Surgeon, or his son of the same name, who appears as a donor to the rebuilding fund of £20.)

Now 1693 is an important year in the history of the Hospital. After the Great Fire in 1666, which made its way from Fish Street Hill, burning down the houses on London Bridge into Southwark, but fortunately stopping almost at the Hospital gates, St. Thomas's fell into great disrepair, and funds being very scanty for rebuilding, Sir Robert Clayton, the Lord Mayor and President of the Hospital, with the Governors, appealed to public benevolence, which was liberally responded to. In the rebuilding hardly any of the original structure remained. The President erected a square at his own expense, and in the centre of this in 1701 was placed his statue, which is familiar to you all in our new Hospital opposite the school entrance. Guy,

who was a Governor in 1707, erected three wards at his own expense, and another Governor, Mr. Frederick, did the same. Besides the new wards, there was the cutting ward for lithotomy cases, used both for the operation and after treatment; this contained seven beds, and was called Cutt's ward.¹

Whether due to the rebuilding or otherwise, it would appear that the surgery and its exponents at the Hospital at this period were not of a very high standard, if the records of the Company of the Barbers-Surgeons are to be relied on.² In October 1695, complaints were made by many brethren "against breeding soe many Illiterate and unskillful pretenders to Chyrurgery att St. Thomas's hospitall or wherever else y^e like ill Practises are used. Where contrary to y^e oath of our Company and of y^e City of London y^e Chyrurgeons pretend to qualifie any person how unfitt soever in half a year or a year for the expert practise of our art. Which injustice in them being attended with a considerable profit is maintained by a pretence of service to the puplick, Whereas in reallity itt is directly contrary, and an absolute overthrow to our Company, subverting the very fundimentalls of y^e Legall Education by way of apprenticeship." The Company no doubt suffered considerable pecuniary loss by the establishment of medical schools at St. Bartholomew's and St. Thomas's. "For," as the Memorial goes on, "is it reasonable to suppose y^t any person will give soe much money as we generally require and a seaven years apprenticeship, when for a fourth or less and in the space of one year at furthest they become such proficients as to practise for themselves either about the town, in the army or navy or elsewhere with y^e reputation of being bred in an Hospital. Nay soe far has this mischiefe extended itself that . . . one if not two of y^e very master Chyrurgeons of that Hospital had noe Education but what was Spurious and of this sort." The matter was brought formally before the Company, and an investigation was held resulting in the following minute :

¹ Golding's 'History of St. Thomas's Hospital.'

² South, 'Memorials of the Craft of Surgery.'

"At a Court held at Barbers' and Chirurgeons' Hall, London, the 5th of November, 1695—

"The Court being informed that the Chirurgeons of St. Thomas's Hospital, in Southwarke, did teach the Art or Mistery of a Chirurgeon contrary to the Lawes of the Company, and they appearing and alledging that they nor any of them ever did take an apprentice for less time than seaven yeares, and that the cause of complaints against them as they supposed was that they admitted young men to dresse under them being not bound to them or any of them as an apprentice though bound to another Chirurgeon or such as had served a considerable time to a Chirurgeon in the country and for bettering their Judgements in the Art came to London to see the practice of the Hospital ; and whereas it appeares that young men bred in the country have not that thorough knowledge in Chirurgery as they ought to have whereby to preserve the lives and limbes of his Majesty's subjects, and the said Chirurgeons engaging for the future that they will not take any person to dress under them or any of them other than as above specified, and will, before they admitt them to their practice perduce good certificates under the hands of two or three credible persons of the service of the said party or parties, which said certificate to be affiled with our Clarke, as also that good security shall be given to the Governours of the Company for the time being that such person or persons shall not at any time hereafter (unless first admitted into the Company) practice or use the art of Chirurgery within the City of London, or seaven miles thereof. Upon due consideration had, its ordered that they shall have liberty to make use of such young men as above, they performing the severall particulars before mentioned, as also that they shall before they admit an apprentice to a freeman of the Company in the Hospitall to see their practice perduce in Court his Indenture that an Entry thereof may be made by our Clarke for the time being for which purpose its ordered a book be kept," etc.¹

On March 17th, 1698, the Committee suspended Mr. Thomas Elton, one of the surgeons who had assaulted and

¹ *Vide* South, 'Memorials of the Craft of Surgery.'

beaten Mr. Samuel Ridout, another surgeon. He was, however, reinstated upon promise of future good behaviour and a reprimand from the Treasurer, but he lost priority "particularly in their walking, in their attendance on the Governors to Church in the Easter holidays." Mr. Browne, at the same time, now adopting a more humble tone, appealed to be made a fourth or extra surgeon, but was again refused.

In 1699 we find fresh orders given to the surgeons:— "That all the Doctors and Surgeons do meet together at the house every Monday, Thursday, and Saturday by 10 of the clock to take care of the poor, and that every Saturday they go altogether through the wards to visit and inspect the patients, and then and there jointly consider and consult of and concerning such whose cases are extraordinary and difficult, whether Doctors' or Surgeons' patients, and then and there prescribe and direct such administrations or operations as shall be by them or the major part of them (whereof one shall be a Doctor) thought fit."

The following resolution was passed on June 4th, 1700:— "It is left to the Right Worshipful the President, and what Governors he pleases to call to his assistance, to treat with Doctor Cyprianus about instructing three Chirurgeons for the service of this house in the methods he useth in the operation of cutting of the Stone within this hospital, and that he acquaint this Court of his proceedings therein." This minute follows, October 3rd, 1900:—"And whereas at a Committee on the 9th of May last the Right Worshipful the President of the Hospital (being then present) was pleased to inform the said Committee that pursuant to the desire and recommendation of the General Court held here on the 4th of June then last past he had treated with Doctor Cyprianus about his instructing two of the Surgeons for the service of this hospital in his method of cutting for the Stone, and that the Doctor had expressed himself very ready and willing to do the same as soon as he should have notice what two surgeons were appointed for that purpose. And we, being then acquainted that Mr. Elton (who was chosen with Mr. Ridout the last year to be employed as one of the principal Surgeons for cutting of the Stone in this

Hospital for one year ending at Midsummer then next coming), desired to be excused at present by reason of his indisposition for acting in that operation. And their being severall patients in the House who waited to be cut, and that being the propper season of the year for doing it, we thought it highly necessary forthwith to appoint some other Surgeon in the room of the said Mr. Elton to perform the same operation, and to receive the said Doctor's instructions and directions therein and thereupon Mr. William Pepper, being recommended as a skilful person and fit for that operation having with good success several times performed the same we chose him to officiate in the said Mr. Elton's room as one of the principall Surgeons for the cutting of the Stone from that time till Midsummer, 1702 and from then during the pleasure of the Governors, and to have half the Salary appointed for that purpose. And we likewise thought it necessary and much for the service of the House to admit the said Mr. Pepper for the lifetime as an Assistant Surgeon, for which no salary is to be allowed him. And we then agreed to continue the said Mr. Ridoubt as the other principall Surgeon for the cutting of the Stone for the lifetime. And we here take leave to acquaint this Court that the said Doctor Cyprianus at the request of the President was pleased soon afterwards to come over to this Hospital and cutt several persons of the Stone (without fee or reward) with very good success. At which operations the Doctors of this House with the said Mr. Pepper and severall other Surgeons were present."

There were two surgeons named Cyprianus. Cyprianus the Elder practised at Amsterdam about 1650, especially as a lithotomist, using the "Methodus cum apparatu magno." (This was the method first used by Marianus Sanctus in 1524, and so named from the multiplicity of the instruments used. It was a combination of cutting and dilating, and very barbarous. Paré, Le Cat, Raw, and all the best surgeons in Europe used this method, until Frère Jacques, in 1697, introduced in Paris the modern lateral lithotomy.) He was so successful that he had practically a monopoly.

His son, Abraham, was born in Amsterdam between 1656 and 1660, and studied in Utrecht. He set up in Amsterdam,

and became especially expert as a lithotomist, so that in twelve years' practice he performed 1400 lithotomies. Morgagni speaks of him as "Expertissimus Cyprianus." He is recorded to have performed a noted laparotomy for tubal pregnancy. In 1696 he came to London to operate on the King's physician, Sir Thomas Millington; and he remained here for a few years, during which time he came to the Hospital, as related above.

In October, 1702, being informed by the physicians and surgeons that a sweeting house or bagnio would be of great use and benefit to the Patients of the House, and contribute much to their cure in many cases, we have, therefore, caused a Sweating house with Two Bathing cisterns to be made in the lower floor of the New Wards designed for cutting of the Stone, which are now almost completed.

At the same time Mr. Coatsworth resigned, and William Pepper was appointed in his stead with the usual salary and perquisites.

In 1702 a law is met with precluding pupils and surgeons from dissecting the dead body without permission from the Treasurer.

On March 17th, 1703, the following minute occurs :—"For regulating the number and entertaining the qualifications of such servants and other persons (except apprentices) as shall be admitted under the Surgeons to be present or assist in the Dressing of the patients in this Hospital, we have agreed upon the Orders and Rules following, which we humbly offer to the consideration of this Court :

"1. That no Surgeon shall have more than three Cubbs at one time, nor take any for less than one year.

"2. That none be taken but such as have served five years or upwards with a surgeon or some person practising in Physic and Surgery.

"3. That before any such person be taken in he shall be presented to and approved by the Committee, and shall produce and leave with the Committee or Treasurer a Testimonial from some person of credit and reputation inhabiting in the town or place from whence he comes, and that he is of sober life and conversation.

"And if any Surgeon shall take any such person contrary to Orders, except by license from the Committee, for every offence £20 from his salary for the use of the patients, and shall also incur the displeasure of the Governors."

At the same meeting a more serious matter had to be dealt with. Mr. Thomas Elton and Dr. Torlesse were suspended for taking to their own use money received from the State for the support of the sick and wounded soldiers and seamen taken into the Hospital during the war with France. The Privy Council in 1689 had ordered that half the beds were to be reserved for this purpose. Over four thousand men were admitted, and for each there was an allowance of 6s. 8d. They considered that the profit belonged to them, and kept the money. They were afterwards made to pay the money back (£322 10s. each), and were dismissed. Later, in 1703, we learn they petitioned Her Majesty, Queen Anne, and obtained an order to stop the elections of their substitutes until the Queen had been informed of the reason of their displacement. This was of no avail, however, for on May 5th Mr. James Ferne was chosen Surgeon, and Dr. Mead, Physician.

On September 22nd, 1704, Mr. Pepper having died, Mr. Joseph Bateman was appointed a principal surgeon, but the post for cutting of the stone was not filled up; to this, however, Mr. Ferne was appointed later. On the death of Mr. Bateman in 1710, Mr John Girle was elected in his stead on November 20th.

On May 4th, 1714, Mr. Samuel Ridout having died, Mr. Girle was chosen Mr. Ferne's assistant for cutting the Stone, and Mr. Dickenson became a principal surgeon. Mr. Girle died after holding office a very short time, and Mr. Josiah Paul was elected on January 17th, 1715, William Cheselden being one of the candidates.

March 1st, 1715.—"There having been a customary allowance made to the Surgeons of the Hospital upon the Amputation of Limbs, Fingers and Toes of Poor patients, which, upon examination, amounts to about £10 per annum And the Surgeons complaining that this allowance has been the occasion of some reflexions upon them We have therefore thought it proper and recommend it as our opinion that for

the future £4 per annum be allowed in lieu thereof to each of our Three Surgeons and that the said Amputation Fee entirely cease."

"We having had no other Surgeon who cutts for the Stone within this Hospital but Mr. Ferne since the decease of Mr. Girle and thinking it proper to have all the Surgeons in this Hospital employed in that operation We humbly recommend to this Court Mr. Dickenson and Mr. Paul our other two Surgeons be chosen Surgeons for the said operation in the Hospital together with the said Mr. Ferne."

On July 8th, 1718, it was determined to appoint an Assistant Surgeon without any fixed or settled allowance, and Mr. William Cheselden was freely chosen. He succeeded on April 8th, 1719, to the principal Surgeoncy on the death of Mr. Dickenson, and Mr. Joseph Tanner was appointed Assistant; the latter, on December 9th, was allowed to act as a principal surgeon, with the same privileges and advantages but no salary, nor to ask or solicit for any. This ruling was altered on January 23rd, 1722, for it was recommended "that Mr. J. Tanner be established on the same foot as the other Doctors and Surgeons are with respect to Salaries from Lady-day next, and that Mr. Tanner from henceforth be looked upon and esteemed as one of the principal Surgeons of this Hospital, being considered particularly." This Court doth order the same accordingly, and Mr. Treasurer is directed to pay to him a gratuity of £2.

May 12th, 1725.—“We having considered the difficulties attending the operation of Cutting for the Stone are of opinion that it will be for the service of the Hospital that no person who shall be hereafter chosen as Surgeon into this Hospital be permitted to cut for the Stone within the Hospital until he shall have obtained the further Licence or Consent of the General Court or Grand Committee for that purpose And that such license be not given within less than one year after the time of his being elected a Surgeon and we therefore recommend it to this Court That the same may be made a Standing Order of this Court.”

May 25th, 1726.—The surgeons are allowed to have a

fourth pupil, as Mr. Tanner had died, and there were only to be three surgeons.

Mr. Joshua Symonds was appointed a surgeon on July 28th, 1728, on the death of Mr. J. Paul.

The rebuilding of part of the Hospital, including the cutting room, etc., is recommended on May 8th, 1730.

Mr. Symonds got his licence for cutting the stone on July 22nd ; but he did not enjoy this for long, as he died on July 14th the next year, and Mr. John Girle succeeded him.

On March 9th, 1738, Mr. Cheselden's resignation was announced, and Mr. John Whiting was appointed.

With the name of Cheselden, and with some of his personal connections still about the Hospital, many of us are familiar. Of all the old surgeons he is the one who stands out first and foremost, shedding the same lustre on St. Thomas's as the name of Percival Pott does on St. Bartholomew's a little later.

William Cheselden was born in 1688. He was a pupil of Cowper, the anatomist, and apprenticed to Mr. Ferne in 1703, at the age of fifteen, for seven years. On December 5th, 1710, he was admitted to the freedom and livery of the Barber-Surgeons, and on the 29th of January following he had a full certificate to practice as a surgeon. He soon became a great teacher of anatomy, and when only twenty-three was elected a Fellow of the Royal Society.

In March, 1714, we find him at variance with the Barber-Surgeons, for he had often procured the bodies of malefactors and privately dissected them at his own house, and that at times when lectures and demonstrations were proceeding at the Hall, whereby the attendance at the Hall was diminished, and contrary to the laws of the Company ; whereupon he was summoned before the Court, and reproved, when he promised not to offend in the same way again.

In 1719 he was appointed Surgeon, and in 1723 he wrote a Treatise on the High Operation for the Stone, which was first performed in England by Dr. Douglas in 1719. Soon afterwards Cheselden abandoned this for the Lateral Operation, which, originated by Frère Jacques, had been adopted by Raw in Holland. He cut his first patient in this way

March 27th, 1727, a few days after Bamber had done the first case at St. Bartholomew's, and he brought the operation to perfection. (Little did it seem likely, as in the last twenty years has happened, it would become a lost operation, succeeded by lithotripsy and the despised supra-pubic method.) He was also a pioneer in eye surgery, being the first to make an artificial pupil, and was successful at "couching." He published an 'Anatomy of the Human Body,' and 'Osteographia.' When St. George's Hospital was first opened he became Surgeon for three or four years, and he was elected Surgeon to Chelsea Hospital in February, 1737. In 1727 he was appointed Surgeon to Queen Caroline. He died at Bath, April 10th, 1752, and was buried at Chelsea Hospital.

Cheselden was Warden of the united Barber Surgeons' Company in 1745, when on June 24th the Surgeons were by Act of Parliament separated from the Barbers, after being associated for over two hundred years; and the Surgeons Company was founded. The new Company built a theatre for their lectures and demonstrations in the Old Bailey, where they remained until the close of the century, when they removed to their freehold premises in Lincoln's Inn Fields.

In 1739 Mr. Thomas Baker is elected on the death of Mr. John Whiting.

In April, 1741, Mr. Joseph Paul succeeds on Mr. James Ferne's death. The latter was Warden of the Barber-Surgeons in 1724, 1727, and 1728, and Master in 1733.

August 23rd, 1749.—Mr. John Girle resigns, and Benjamin Cowell is elected.

On November 6th, 1751, we find this order made:—"That the Doctors and Surgeons do meet every Saturday at 11, and go all together through the wards to visit and inspect the patients, and then and there jointly consider and consult such whose cases are extraordinary and difficult." This weekly consultation still survives at St. Bartholomew's.

It was ordered that only bound apprentices at Surgeon's Hall for seven years should be allowed to act as dressers.

June 25th, 1760.—Mr. Thomas Smith appointed on the resignation of Mr. Joseph Paul.

September 28th, 1768.—Mr. Joseph Else was appointed on the resignation of Mr. Cowell. He was a good anatomist, and Professor in that subject at Surgeon's Hall, and founded a regular anatomical school at St. Thomas's. He wrote a work on the Hydrocele. He died early in 1780, and Mr. Joseph Waring was elected. His anatomical preparations were purchased by Cline, and passed into the Hospital Museum. Cline then was appointed by the Governors in August, 1781, to read anatomical lectures, and Mr. Martin surgical lectures.

January 24th, 1783.—Mr. Chandler was appointed on the death of Mr. Waring.

May 12th, 1784.—Mr. John Birch appointed on the death of Mr. George Martin.

December 15th, 1784.—Mr. Henry Cline is elected, Mr. Thomas Smith having died.

For some long time now there was no change, but on June, 1812, on Cline's resignation, Mr. Henry Cline, jun., his son, was elected against Mr. Benjamin Travers.

Henry Cline was born in London in 1750, and was educated at the Merchant Taylors School. At the age of seventeen he was apprenticed to Mr. Thomas Smith (Surgeon of St. Thomas's), and was so promising that he lectured for Else before qualifying. On June 2nd, 1774, he got his diploma. It is recorded of him that he was so wrapt up in his work that he lectured on the day he was married. In 1796 he was elected a member of the Court of Assistants of the Surgeons' Company, but, owing to a proper quorum not being present, the meeting was irregular, and its proceedings illegal. Through this informality the Act of Incorporation was rendered void. After the failure of a Bill to legalise proceedings, the Company was freshly incorporated by a Charter of George III in 1800 as the Royal College of Surgeons. Cline was Examiner and Hunterian Orator; Master in 1815; and, when the title had been altered, President in 1823. He is said to have made £10,000 a year, but spent it freely on farming and politics. His bust, by Chantrey, was subscribed for by his pupils, and a replica is in our Hall. He was a good sound surgeon, but deficient in industry and professional zeal,

according to Sir Astley Cooper. His splint has rendered his name familiar.

March 1st, 1815.—Mr. Benjamin Travers elected on the death of Mr. John Birch.

John Birch was born about 1745, and after serving in the army settled in London, and was elected Surgeon at St. Thomas's. He was Surgeon-Extraordinary to the Prince Regent. He was a good surgeon, a great advocate of electricity in treatment, and a strong opponent to the introduction of vaccination. He founded an electrical department at St. Thomas's, which he carried on himself for some twenty-one years, but with little assistance, owing to the want of enthusiasm on the part of the students, and with little remedial value, as then only frictional electricity was available, or rather galvanism was not understood. He wrote against vaccination, but in favour of inoculation for small-pox ; and several works on electricity. His first work ('Considerations on the Efficacy of Electricity in Removing Female Obstructions') passed through four editions, and was translated into German. He died in 1815.

Mr. Henry Cline, jun., died of phthisis on May 27th, 1820, and on the following June 14th his cousin, Joseph Henry Green, succeeded him. Mr. Tyrrell was elected soon afterwards, on June 21st, 1822, on the death of Mr. Chandler.

Mr. George Chandler was an Examiner and a member of the Court of Assistants, and Master of the College of Surgeons three times—in 1801, 1808, and 1817.

Mr. South gives the following personal reminiscence of him :—“ When I first knew him he was an elderly man, but very active and brisk for his age. He was short in person, bald and grey-headed, careless about his dress, which however was scrupulously clean and nice ; and in the summer-time he delighted in nankeen trousers, and was evidently the remnant of an old beau. In his manners a perfect gentleman, kind and affable to every one, even to the poorest person he came near. He was an Examiner at the College of Surgeons, and, for his easiness, the candidates always longed to fall under his examination, as they felt pretty sure that he would certainly pass them. Insomuch

that there was a common story that Mr. Chandler never rejected but one man in his life, and that he was so distressed about it that he did not sleep for a fortnight, and declared he would never turn back another pupil. As to his surgical attainments, he was a fair surgeon, and personally took as much care of his hospital patients as he would of the most wealthy in private. He most commonly himself assisted in the dressing of his patients when he went round. I often saw him operate, and doubt not that at an earlier period he had been a very good operator, though he was not much of an anatomist. He was very rapid; indeed, the quickness with which he operated was marvellous, and seemed almost like conjuring."

On April 9th, 1834, the Court decided to elect an Assistant Surgeon, who was to reside in the vicinity of the Hospital, and on April 30th Mr. Flint South received this post.

For a few years there was no change; but the work increasing, in July 2nd, 1841, it was decided to elect two additional Assistant Surgeons. Mr. Mackmurdo and Mr. Solly were appointed; but further changes soon followed, for on the 28th July, Mr. Travers having resigned, Mr. South became full surgeon, and Mr. Benjamin Travers, jun., Assistant Surgeon.

Benjamin Travers was born in 1783, and started life in his father's office. Taking a great dislike to such work, he turned his attention to medicine, and was articled to Sir Astley Cooper in August, 1800, for six years, becoming his resident pupil. He obtained the Membership of the College in 1806, and then went to Edinburgh for a time, but returned to London the next year. Through his father's failure he accepted an appointment of Surgeon, in 1809, to the East India Company's Warehouses. In 1810 he became Surgeon to the London Infirmary for Diseases of the Eye, now Moorfields, where he acted alone, until in 1814 William Lawrence became his assistant. He was elected F.R.S. in 1813. Soon after his appointment to St. Thomas's in 1815, he gave up his post in the East India Company's service, and in 1816 his Surgery at Moorfields. He suffered from palpitation of the heart, which caused his resignation of the

joint chair of surgery with Sir Astley Cooper in 1819. In 1834 he started to lecture again, in association with Tyrrell, at St. Thomas's Hospital. He filled all the offices at the College, and became President in 1847 and 1856. He died in 1858.

As a surgeon, Le Gros Clark says of him:—"He was nervous and clumsy as an operator. I often thought he should have been a physician." He was, however, a man of great scientific attainments, and a good writer, publishing 'An Inquiry into the Process of Nature in repairing Injuries of the Intestines' (1812), 'Inquiry concerning Constitutional Irritation,' a work on 'Diseases of the Eye,' and others.

Upon the sudden death of Tyrrell in 1843, Mackmurdo became full Surgeon, and Le Gros Clark was appointed an Assistant Surgeon.

In August, 1847, we find very sweeping changes introduced, in that the post of Dresser, so important in the past, became of much lessened significance. It was determined—

- (1) That the Junior Assistant Surgeon be no longer resident.
- (2) That two House Surgeons be elected, who shall have passed the College and Hall, St Thomas's pupils having the preference.
- (3) That one should hold office for six months, and one for twelve months, an election taking place every six months. (This regulation was afterwards modified, so that both appointments were for six months, and the holders were elected at the same time).

- (4) That they should reside in the Hospital, and be on duty (for accidents) alternate weeks.

At the same time Mr. Simon was invited to the newly-created Lectureship on Anatomical Pathology, and to have beds for that purpose, and it was further decided that a certain number of beds should go to the Assistant Surgeon.

Benjamin Travers, jun., resigned in January, 1847, on account of ill-health, his death occurring soon afterwards. Mr. James Dixon obtained his place, but, his leanings being towards ophthalmic work, he did not hold this position long, as he resigned on December 17th, 1851.

No fresh appointment was now made, and it was resolved

"that Mr. Solly and Mr. Clark do attend the out-patients as heretofore, assisted by Mr. Simon, and that the beds formerly held by Mr. Dixon be divided between Mr. Solly and Mr. Clark."

In 1853 several changes occurred. Joseph Henry Green retired, and on June 28th Samuel Solly became full surgeon. At this election it was ordained that the candidates must have obtained the newly-created Fellowship of the Royal College of Surgeons. On July 20th Le Gros Clark became a Surgeon with Mr. (now Sir) John Simon, but they were only to do out-patient work. Mr. John Simon was at this time an Assistant Surgeon to King's College Hospital, which post he resigned. His great services as a pioneer in public health have made his name famous, and through them will live to posterity.

The appointments of assistant surgeons lapsed from this period for a while.

Joseph Henry Green, the son of a City merchant, was born in 1791, and he was a nephew of Henry Cline, to whom he was apprenticed at St. Thomas's. He became Demonstrator of Anatomy in 1813, and Surgeon in 1820. In 1825 he was elected Professor of Anatomy to the Royal Academy of Arts. He shared the Lectureships on Anatomy and Surgery with Sir Astley Cooper, and the latter's retirement led to a dispute which caused the break between the St. Thomas's and Guy's Schools. He afterwards was elected Professor of Surgery at King's College in 1830. His reputation as an operator stood high. He was twice President of the College, in 1849 and 1858, was elected a Fellow in 1843, and a member for some time of the Court of Examiners. He was the College's first representative on the General Medical Council in 1858, being its President until his death. A great friend and admirer of Samuel Taylor Coleridge, he was named his literary executor. He died in 1863.

In May, 1858, a very necessary resolution was made limiting the term of office of Surgeon, the holders being required to retire at sixty years of age, or after a term of twenty years' service.

Owing to the increase of the work of the hospital it was

found desirable, in June, 1860, to appoint an Assistant Surgeon, who was to reside in the vicinity of the hospital. Mr. Sydney Jones obtained this post.

In 1863 Mr. South resigned on April 11th, and Mr. Mackmurdo on July 6th. Mr. John Croft succeeded Mr. Sydney Jones as junior under the same conditions as to residence.

John Flint South, the apprentice of Cline, tells his own tale so forcibly in the 'Memorials of J. F. South,' published after his death from his own notes, that I can refer my readers to a work that will give great pleasure in perusing, and from which some of the inner life of the Hospital at that time can be learned. He became Demonstrator of Anatomy in 1823, conjointly with Bransby Cooper, and on the retirement of Astley Cooper in 1825 he became Lecturer on Anatomy in preference to Bransby Cooper, and it was due to this cause that a split occurred between the United Hospitals; from this time the two distinct medical schools of St. Thomas's and Guy's were established. He held all the posts at the College of Surgeons, and was twice President, in 1851 and 1860. He is the historian of surgery, and from his labours and the numerous notes collected was written the 'Memorials of the Craft of Surgery.' As a surgeon, to us his name is linked with a historical specimen in our Museum; it is a case of ligature of the abdominal aorta for an aneurysm of the external iliac artery, and I cannot do better than tell you of this case in his words. "June 21st, 1856.—At eight this morning went with Sutton Sams to 'Dreadnought' to find Black and get body to take up aorta, which I did pretty well: back home; left by 12.21 North Kent to Hospital. There met Green in consultation about aneurysm case and settled with him about tying aorta. Mr. Simon and Busk afterwards saw it. Waited for Luke, but he did not come. I was in a great state of anxiety during the hour; but I had prayed earnestly for help last night and constantly during the morning, and was most graciously heard. We went into the theatre a little after two, and though it took long to get patient under chloroform, directly I sat down I was perfectly calm; went through the operation with great quiet and self-possession, and not

to the disadvantage of the patient. Green, Solly, and Clark, and also Croft, who had come up from the 'Dreadnought,' were very able assistants and part of myself. I never operated with more self-command and steadiness; and He knows, in whose help alone I relied, how thankful I am for an answer to my prayers."

South resigned his Lectureship on Surgery in April, 1860, and his Surgeoncy in April, 1863. He died in 1882, aged eighty-five, active in mind and body almost to the end.

The days of the Hospital in its old site were now drawing to a close, and temporary shelter was found in the Surrey Gardens, when the glories of the Hospital were for a time dimmed, and its Medical School became reduced to very small proportions. Solly, whose term of office had been extended in 1865, resigned in December, 1870, and his place was filled by the appointment of Mr. (now Sir William) MacCormac as Assistant Surgeon in February, 1871. At the same time it was resolved that a new post should be created, styled Resident Assistant Surgeon, and its first holder was Mr. Wagstaffe.

Samuel Solly was born in 1805, and was articled in May, 1822, to Benjamin Travers, and he was one of the last surgeons to a London hospital who succeeded to this post by the payment of a large apprenticeship fee. He was Lecturer on Anatomy and Physiology from 1833 to 1839, becoming Assistant Surgeon in 1841, and full Surgeon and Lecturer on Surgery in 1853. He was called upon to retire in 1865 under the new rule, which fixed the limit at sixty, but as he pleaded that the rule should not be retrospective, he was extended; but his health giving way he resigned in 1870. He was a Fellow of the College, Member of Council, and twice Vice-President. He was a skilled surgeon, good lecturer, and a splendid artist. After his death, in 1871, the Solly Prize was instituted to his memory, in which an essential feature is that the 'Reports' shall be illustrated. He wrote several works, especially one on the Brain.

In the summer of 1871 the present Hospital was opened by the Queen, and the number of appointments was increased.

Mr. Le Gros Clark, Mr. Simon, Mr. Sydney Jones (who

had succeeded Mr. Solly as Surgeon earlier in the year), and Mr. Croft were the Surgeons; and Mr. MacCormac was joined by Mr. Francis Mason, who came from Westminster, and by Mr. Henry Arnott, from the Middlesex Hospital, as Assistant Surgeons.

Although in the efflux of time another staff and younger generation have taken their places, with the exception of Mr. Le Gros Clark and Mr. Francis Mason they still live, and long may they enjoy their lives. All have done good work, and have left their mark on the pages of our surgical history. A consolation to them may be the knowledge that their younger colleagues and pupils are endeavouring to maintain the traditions of our institution, and to place St. Thomas's in the van of surgical progress.

Mr. Le Gros Clark died as recently as 1892 at the great age of eighty-one. His stately presence is remembered by many of us, and within a short time of his death he was among us, telling us the results of his long experience. In 1827, at the age of sixteen, he was apprenticed to Travers, and became Cheselden Medallist in 1830. In 1839 he was appointed Lecturer on Anatomy, and subsequently Assistant Surgeon and Surgeon, retiring in 1873. He held all the positions at the College, becoming President in 1874. He had a very facile pen, with a knowledge of languages and continental surgeons, and he translated some important works, particularly those of Dupuytren.

As the surgeons and their work at the new St. Thomas's do not come within the scope of this paper, I have now concluded my task, which I trust may prove of interest to my readers.

In the compilation of this record I am indebted to the writings of Golding and Rendle on St. Thomas's Hospital, to Flint South's 'Memorials of the Craft of Surgery,' to the 'Annals of the Barber-Surgeons,' and to the 'Dictionary of National Biography.'

Appended is a table of the Surgeons holding office during the period dealt with.

TABLE OF THE SURGEONS OF SR. THOMAS'S HOSPITAL.

Date of appointment.	Surgeon.	Succeeded.
1560 ...	Thomas Pratt.	
1566 ...	Robert Garbutte	... T. Pratt, <i>r.</i>
1567 ...	Richard Wood.	
" ...	John Brygge.	
March 7, 1568	Gregory Joye	... R. Garbutte, <i>d.</i>
" 28, 1569	William Gale	... J. Brygge, <i>r.</i>
May 2, 1569	Oliver Warbeck	... G. Joye, <i>r.</i>
Sept. 20, 1574	William Crowe	... O. Warbeck, <i>r.</i>
April, 1587	Thomas Crowe	... W. Crowe, <i>d.</i>
Jan. 11, 1605	James Mullins, or Molins	... T. Crowe, <i>d.</i>
Feb. 19, 1606	Henry Blackley	... W. Gale, <i>r.</i>

Records now imperfect till 1622, but in this interval probably Thomas Martyn and Christopher Frederick held office.

July 12, 1622	Edward Fleet.	
1639 ...	Edward Molins	... James Molins.
1644 ...	Thomas Hollyer	... E. Molins, <i>dismissed.</i>
June 14, 1648	Lawrence Loe	... E. Fleet, <i>d.</i>
" "	Henry Clodd	... H. Blackley, <i>d.</i>
1649 ...	Giles Hicks	... L. Loe, <i>r.</i>
Feb. 8, 1650	William Watson	... H. Clodd, <i>r.</i>
Aug. 20, 1652	Thomas Allen	... G. Hicks.
Dec., 1660	Edward Molins, reinstated as a 4th, <i>d.</i> 1663.	
Nov., 1663	James Molins	... W. Watson, <i>r.</i>
Feb. 9, 1665	William Peirs or Perse	... T. Allen, <i>d.</i>
June 21, 1683	John Browne	... W. Peirs, <i>r.</i>
" "	Edward Rice (extra).	
" ?	Court	... T. Hollyer, <i>r.</i>
1686 ...	Thomas C. Elton	... J. Molins, <i>d.</i>
" ?	Wm. Pepper (assistant).	
July 7, 1691	Samuel Smith	... J. Browne, <i>dismissed.</i>
" "	Samuel Ridoubt	... Court,
" "	Coatsworth	... Elton,
Jan. 13, 1693	Thomas Elton	... S. Smith, <i>d.</i>
May 9, 1701	Wm. Pepper (assistant).	
Oct., 1702	William Pepper	... Coatsworth, <i>r.</i>
May 5, 1703	James Ferne	... T. Elton, <i>dismissed.</i>
Sept. 22, 1704	James Bateman	... W. Pepper, <i>d.</i>
Nov. 20, 1710	John Girle	... J. Bateman, <i>d.</i>
May 4, 1714	Dickenson	... S. Ridoubt, <i>d.</i>
Jan. 17, 1715	Josiah Paul	... J. Girle, <i>d.</i>
July 8, 1718	William Cheselden (assistant).	

r = Retired.

d = Deceased.

Date of appointment.	Surgeon.	Succeeded.
April 8, 1719	William Cheselden ...	... Dickenson, d.
" "	Joseph Tanner (assistant).	
Dec. 9, 1719	Joseph Tanner, a 4th surgeon, d.	
	May 25th, 1726.	
July 28, 1728	Josuah Symonds ...	... J. Paul, d.
„ 14, 1731	John Girle ...	... J. Symonds, d.
March 9, 1738	John Whiting ...	... W. Cheselden, r.
1739	Thomas Baker ...	... J. Whiting, d.
April, 1741	Joseph Paul, ...	... J. Ferne, d.
Aug. 23, 1749	Benjamin Cowell ...	... T. Girle, r.
?	George Martin ...	... T. Baker (?).
June 25, 1760	Thomas Smith ...	... J. Paul, r.
Sept. 28, 1763	Joseph Else ...	... B. Cowell, r.
1780	Joseph Waring ...	... J. Else, d.
Jan. 24, 1783	George Chandler ...	... J. Waring, d.
May 12, 1784	John Birch ...	... G. Martin, d.
Dec. 15, 1784	Henry Cline ...	... T. Smith, d.
June, 1812	Heury Cline, jun. ...	... H. Cline, r.
March 1, 1815	Benjamin Travers ...	... J. Birch, d.
June 14, 1820	Joseph Henry Green ...	... H. Cline, jun., d.
„ 21, 1822	Frederick Tyrrell ...	... G. Chandler, d.
April 9, 1834	John Flint South (assistant).	
July 2, 1841	G. Mackmurdo (assistant).	
„ „	Samuel Solly (assistant).	
„ 28, 1841	John Flint South ...	... B. Travers, r.
„ „	Benjamin Travers, jun. (assistant).	
1843	G. Mackmurdo ...	... F. Tyrrell, d.
„ „	Fredk. Le Gros Clark (assistant).	
Jan. 1, 1847	B. Travers, jun., r.	
„ „	James Dixon (assistant), r.	
	Dec. 17th 1851.	
June 28, 1853	Samuel Solly ...	... J. N. Green, r.
July 20, 1853	F. Le Gros Clark, } to do	
„ „	John Simon, } out-patients.	
June, 1860	Sydney Jones (assistant).	
April 11, 1863	Le Gros Clark }	succeeded to { J. F. South, r.
July 6, 1863	John Simon }	beds of { G. Mackmurdo, r.
„ „	John Croft (assistant).	
Jan., 1871	Sydney Jones ...	... S. Solly, r.
Feb., 1871	Wm. MacCormac (assistant).	
July, 1871	John Croft,	
„ „	Francis Mason (assistant) } on opening of New Hospital.	
„ „	Henry Arnott (assistant) }	

PHYSICAL EXERCISES IN THE TREATMENT OF HOSPITAL PATIENTS.

BY FRANCIS C. ABBOTT, M.S.,
SUPERINTENDENT OF THE DEPARTMENT FOR PHYSICAL EXERCISES.

WHEN the new department for physical exercises was opened in 1898, a short paper was published dealing with the chief mechanical apparatus with which the room had been fitted. This will be found in a previous issue of these Reports.¹

The department at that time had only just been started, and it was too early to say much about either methods or results.

Although many gymnasia on various lines have, in the last few years, been started in London, including regular classes at the board schools, they are nearly all purely hygienic or preventive in scope. A department for the systematic use of physical exercises as a curative adjunct to ordinary medical and surgical treatment in a large London hospital is still somewhat of a novelty, and it may be useful to others

¹ ‘St. Thomas’s Hospital Reports,’ vol. xxvi, p. 195, “The New Department for Physical Exercises,” by E. O. Thurston.

to put our experience of the past two years on record and to describe our present methods.

It is useless to furnish an exact statistical report of the cases. The great majority of the patients come from other departments, either in- or out-patients, and have already been included in the records. A minority only come for the first time direct to the department.

The average duration of treatment is long, running into many weeks and months, and though the usual daily attendance is considerable, averaging twenty-five in the last three months, the new cases on each occasion are few.

At first all the cases continued under the care of the medical officer prescribing the exercises, but latterly they have all been surgically seen and treated in the department itself, at a fixed hour before the class is held. This regular surgical examination is of importance, as some of the patients, from physical ill-health, occupation, and such like, do not do well, and modifications in treatment and exercises become necessary. As in all new departures, there was at first a tendency to attempt impossibilities, and to hope for improvement where none was probable. We have now learnt our limitations, and a better selection of cases prevents waste of time and labour.

Difficulties.—The chief difficulty is the limited number of attendances it is possible for either staff or patients to give. There is no doubt that daily attendance for a few weeks can effect more than the same number of hours spread over many weeks. To a certain extent home exercises remedy this, but the home surroundings are too often unfavourable. The simplest apparatus is in some cases impossible, room even for a bar or trapeze being denied, while a Whitely exerciser is beyond their means. The mental power and determination necessary for successful home work is too often totally lacking, as is also proper parental supervision. The long hours of work of many of these girls lands them home in a state of physical exhaustion. Their listlessness and general inertia from this cause, and the anaemia that is so often present, are real difficulties even during the classes themselves, and they have to acquire ordinary alertness and power of attention as a first step.

The lads, many fewer in number, are taken separately, and with them, not having the help of trained attendants, "free-standing" movements and mechanical resistance exercises alone are used, without the true Swedish system. They are, however, keener and more alert, and on the whole improve more rapidly. There is better muscle to fall back upon as a rule.

In order to keep the numbers down, the aim should be not to take the worst or hopeless cases, and to train the others as they improve more and more in free and mechanical resistance movements, so that they can be discharged to complete the cure at home.

The cases.—Spinal curvatures of various types and degree form the bulk of the cases, and a short analysis of these is given in the subjoined table.

Deformity.	Sex.		Age.										Total.
	M	F.	-8	-10	-12	-14	-16	-18	-20	-22	-24	+24	
Scoliosis and lateral deviation—													
Convexity, right dorsal and left lumbar	2	52	4	2	5	12	15	9	3	2	2	...	54
Convexity, left dorsal and right lumbar	1	16	1	2	2	6	2	2	...	...	1	1	17
Convexity, right dorsolumbar	...	3	...	...	...	1	1	...	...	...	...	1	3
Convexity, left dorsolumbar	...	6	...	...	2	1	3	...	...	...	...	...	6
Kyphosis	1	14	...	1	2	2	4	3	...	2	...	1	15
Lordosis	...	1	...	...	...	...	...	...	...	...	...	1	1
Total	4	92	5	5	11	22	25	14	3	4	3	4	96

Scoliosis.—Scoliosis has not here been separated from lateral deviation. A few, but very few, cases of pure deviation without rotation have been noted, and even in these, except the very slight ones, it is impossible to be sure. I am certain that the more carefully they are examined, the fewer will be the cases in which some rotation is not detected in anything beyond the slightest degree of deviation. These very slight cases are not often noticed by

mothers of this class, and even when brought for treatment are not sent to us, and this no doubt explains their almost total absence in this series.

The scolioses have been grouped into two great classes of **S**-shaped and **C**-shaped curves. The dividing line it must be confessed is not very distinct, the one passing into the other simply by enlargement of one arc of the **S** at the expense of the other, and the compensating curve is rarely entirely absent, at any rate below.

Taking the double curves alone, the proportion of those with convexity to the right in the dorsal region to those with the opposite curve is slightly more than 3 : 1, but on adding the single curves the proportion sinks to 2½ : 1. A marked proportion of the left dorsal curves are left handed, or use their left arm more than usual. Whether the dorsal or the lumbar curve is primary is often, in the advanced stage at which they reach us, impossible to say, but my impression is that in a considerable number the primary curve is the lumbar one, and this from static causes—bad habits of standing and sitting, without any inequality in the length of the lower limbs.

Of the 80 cases of scoliosis and lateral deviation 50, or 62·5 per cent., come for treatment between the ages of ten and sixteen. The curvature in most cases has already been some time in existence. Those under ten form only one ninth, and those between twelve and sixteen form half of the total number.

Kyphosis.—The cases of pure kyphosis form 15·625 per cent. of the total number of cases of curvature. The age incidence is much the same as among the lateral curvatures.

Occupation could be made out as the immediate cause in some cases of both groups. The small proportion of males, less than 4 per cent., is no doubt fallacious. The slighter cases in boys are not brought to hospital, and even when they attend they cannot spare the time for this treatment, and are not sent to us. The few cases treated in males have all been extremely severe. Exact measurements in cases of spinal curvature, unless taken by elaborate apparatus and in many directions, give an altogether false impression of the gravity or otherwise of a case. The

amount of rotation associated with the deviation is particularly hard to record. They also take no account of the muscular development, flexibility or rigidity of the spine and amount of chest deformity, and the power of expansion. Yet in many cases where cure or even material improvement of the actual deformity is not for a moment to be expected, striking improvement in these other directions can be obtained. A short period of exercises and rubbing, and then the fitting of a light support, appears to meet these cases best. One of the girls at fourteen has definite signs of active or recrudescence rickets. Others, especially among the kyphoses, bear marks of early rickets. Though spinal curvatures form the bulk of the work, a number of deformities and disabilities of other kinds have been treated, about thirty in all.

Chest deformity.—Some very bad cases of chest deformity due to adenoids and other respiratory obstructions have been sent to the department after the obstruction had been removed by operation. The improvement in them all has been extremely rapid, far more so than is seen in similar cases without special exercise treatment. Were it possible for more of the adenoid patients to undergo a short course of chest-expansion exercises, we should see less permanent harm from this cause, and in the marked cases it should certainly be always ordered as a sequel to operative treatment.

Torticollis.—Three cases of congenital wryneck after operation have been treated by both active-passive and passive-active resistance movements in addition to massage. The gain in immediate, and I should imagine in permanent result was gratifying.

Muscular weakness.—Cases of infantile paralysis of various muscle-groups, of flat feet, etc., have improved by rubbing and mechanical resistance exercises, especially with the rowing machine and the weighted shoes.

Stiff joints.—Stiffness and limitations of movements of all the big joints of the extremities, whether for fracture and other accidents or for disease, have been dealt with in the same way, and in time give better results than cases treated by forcible passive movements alone.

Apparatus.—The accompanying illustration¹ gives a good general idea of the arrangement of the physical exercise room, and shows most of the furniture employed. Some of this apparatus has already been described and figured in these Reports in the paper previously mentioned, and a very brief description will suffice here. The patients in their very necessary intervals of rest are seated round the room on plain forms without backs, but placed so close to the wall as to give them a straight support. An ordinary leather-stuffed couch with special inclined board is made use of for spinal massage and any other rubbings. Specially for use in the Swedish exercises is a high plinth with side footboards and toe straps. This is used for chest expansion, abdominal and spinal exercises, trunk holdings, trunk bending, and other holding and resistance movements. The low plinth with back support, adjustable at different angles to the seat, is no doubt better for some of the respiratory exercises, especially in the case of the more weakly patients. This is not at present among the furniture, owing to limits of space, but is so useful and often wanted that it will probably be fitted, and should certainly be in any such room where space is no object. An adjustable bar, flat in the vertical direction, and capable of being fixed at many heights on either side, is used for suspensions and oblique suspensions, and when lowered and covered with a cushion serves also as a boom for side suspensions, side flexions, and trunk raisings with legs in the standing position. The peg post, a smooth vertical board carrying a row of rounded wooden handles or pegs at equal distances on either side, is not shown on the figure, but is useful in many moulding and holding exercises. A collar with straps and pulley for head suspension, similar to the one used when applying a Sayre's plaster jacket, is kept for cervical and cervico-dorsal cases ; while square stools of suitable height, and for use in the various spring-sitting holding positions, complete the simple special equipment of the Swedish movements.

In addition to these, other apparatus for purely mechanical resistance is fitted, including two Sargent's combination weight-and-pulley machines, with rowing board and sliding

¹ From a photograph kindly taken for me by Mr. N. Carpmael.

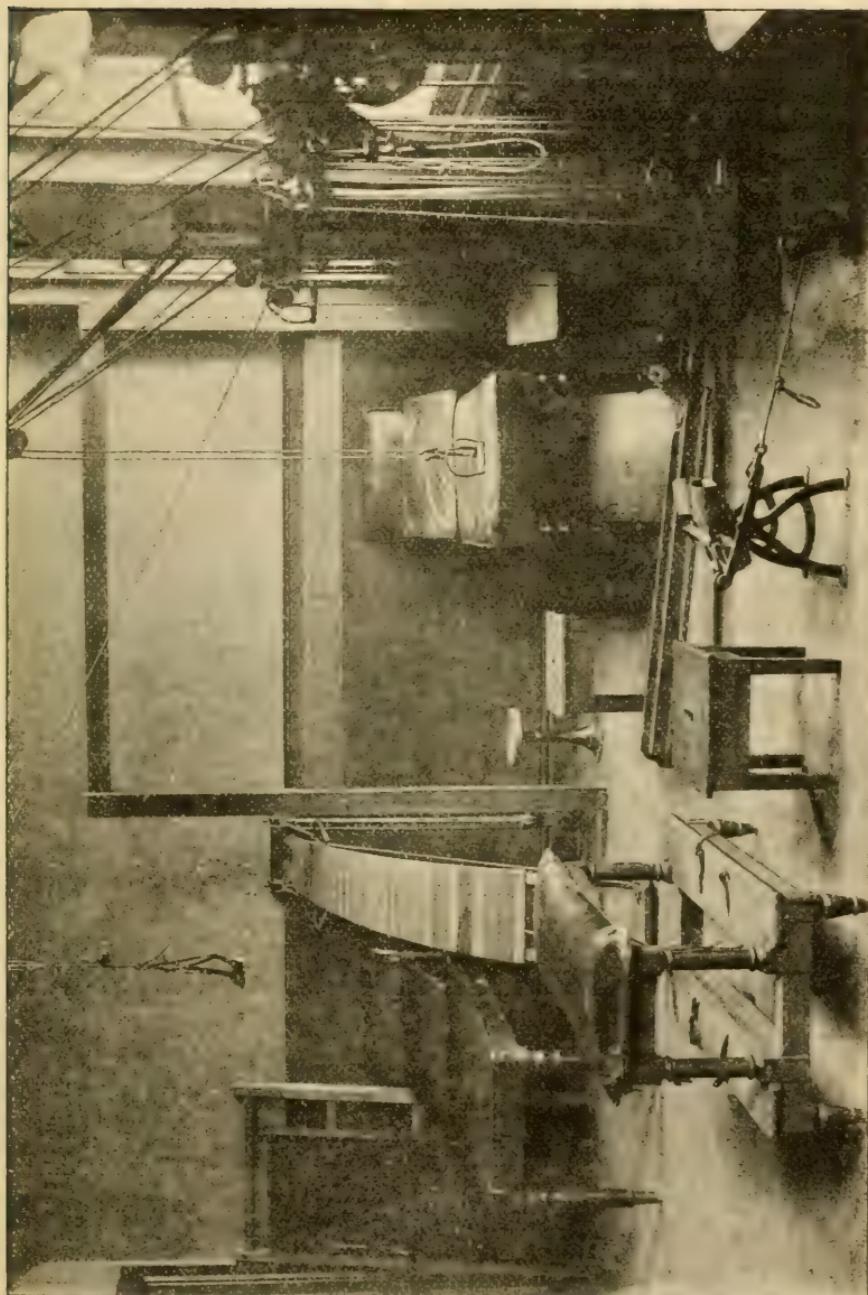


FIG. 3.—THE PHYSICAL EXERCISE ROOM, ST. THOMAS'S HOSPITAL.

seat combined, a quarter-circle weight-and-pulley machine, a pair of ankle and leg-exercising shoes, a wrist-roller, and ordinary elastic Whitely exercisers. By means of these four or five patients can go through their mechanical resistance exercises at the same time. In this way the number of assistants required is lessened, and the patients learn exercises which the more intelligent and better situated can perform at home.

*Methods.*¹—The patients all change before the class, wearing their ordinary clothes fixed round the waist, but above this nothing but a loose jacket put on wrong side before and buttoning down the back. In this way it is easy at any moment to expose the spine, note the amount of correction that any exercise produces, and apply pressure to the most prominent part of the deformity.

It is important also that the assistants should be dressed in easily changed and washable overalls, similar, for instance, to operation blouses, as the contact between assistant and patient in many of these exercises is necessarily close.

The true Swedish system of resistance and other exercises performed by the help of a skilled assistant, could not be solely employed without a great increase of staff, so with these are combined "free-standing" movements and exercises with help of mechanical apparatus. Massage is also done on many of the cases during the class.

The actual exercises during the class are arranged and carried out by Miss Nicodemi with the help of two nurses. To her knowledge of the system and her technical skill much of the success attained has been due.

The whole of the exercises we employ may be grouped under the three heads :

1. Active movement.
2. Passive movement.
3. Resistance movements.

Active movements are made use of in the two forms of so-called "free standing," or, as I should prefer to call them,

¹ In describing the exercises shortly, some terminology must be used. I have mainly adopted the terms used in the translation of Dr. Anders Wide's 'Hand-book of Medical Gymnastics,' translated direct from the Swedish, only altering the terms where some other English word seemed to me better to convey the meaning

changing-position movements, and “holding” or *fixed-position* movements.

These active movements, when properly learnt, can be performed by the patient alone without the help of any second person or mechanical apparatus. They must therefore form the bulk of all home exercises, especially among the poor.

To gain any real benefit the patient must take a correct fundamental position, must perform each exercise slowly and smoothly, while retaining all the time the correct poise and balance of the body, and must concentrate his whole attention on this. There can be no doubt that when accurately gone through they are of great benefit, and that by careful selection any desired combination of muscles can be braced and improved, and any deformity counteracted. The difficulty is to make the patient perform them with sufficient care when not watched.

We use the “free-standing” or *changing-position* movements as two drills, in the middle and at the end of the afternoon’s work.

In the earlier one they are taught to take the correct fundamental position, and with arms either free or in “hips-firm” or “neck-firm” position—one or both arms being placed on the pelvic brim or behind the nape of the neck,—to go through trunk-bending, knee-bending, and heel-raising exercises. By attention to the arm position of each patient their particular curve can be counterbalanced while doing this general drill.

The second drill is entirely devoted to respiratory and chest-expansion exercises, as being the most suitable with which to end up the afternoon’s work.

“Holding” exercises, or *fixed-position* exercises, are those in which the patient takes a difficult position, entirely correcting or over-correcting the deformity, and retains it by the active use of his own muscles alone.

Such are the various “leg-lying” and “side-lying” trunk holdings, in which the whole of the patient’s body in front of the pelvis is free from support,—used in kyphosis and lateral deviation respectively,—and the “spring-sitting” or “stride-sitting” holdings used for the correction of lumbar curves.

All suspensions from the straight and oblique bar, and those with the addition of thigh flexion for lordosis, would also come under this head.

Passive movements will include—

General passive movements.

Local passive movements.

Mouldings.

The most important general passive movements are the various forms of chest expansion performed by the assistant on the patient, similar in aim to ordinary artificial respiration, yet varying in scope and strength according to the method employed and position in which the patient is placed. They rapidly produce important results on chest capacity and range of movement, and I am sure should play a part in the treatment of many medical chest conditions.

In cases of marked chest deformity due to adenoids and other naso-pharyngeal obstructions, with flattened upper chest and deep submammary groove, if these exercises be given after the obstruction has been removed by operation the improvement is extraordinarily rapid. These movements are not absolutely passive, as they should be taken on the top of, and to supplement an ordinary full inspiration.

Local passive movements in special cases mean ordinary massage, which a nurse gives every afternoon to the spinal muscles of all the worst cases. In joint cases, adhesions and contractions, they would also take in forcible local movements,—“passive movement” as we ordinarily use the term.

Under *moulding* movements I include all forcible rectifications of deformity, as, for example, correction of a spinal curvature by pressure on the most prominent part of curve or diagonal pressure on most prominent deformed part of chest, either by the assistant’s hand or the pressure of a padded boom, when patient is laid across it.

As I do not believe in true rectification of a deformity when so rigid that muscular action and mere body-weight will not remove it, I set less value on these methods than on any others used. But when employed, as is often the case, in conjunction with active movements on the patient’s part, they have a real use, and by partially correcting, though temporarily, the wrongful position, allow

the muscles to act more nearly in their proper line, and therefore at less disadvantage. But when a curvature has reached the point when these exercises are necessary, no cure is possible, and our whole object should be increase of muscular strength, without any idea of diminishing the deformity.

Resistance exercises more than all others belong especially to the Swedish system. We use them in the two forms of "active-passive," or active movements of the patient against passive resistance by the attendant, and passive-active, or passive movement performed by the assistant against active resistance of the patient.

I think there can be no doubt that these exercises are the most valuable of all, whether given in the fundamental standing, sitting, or lying position.

No mechanical contrivance can exert the nicely graduated resistance offered by a skilled assistant—graduated as to time, strength, and point of application.

A short trial in the position of patient will convince any doubter how accurately and effectively any group of muscles can be tested and exercised, how quickly the weak spots are picked out, and how strong and tiring these movements that look so simple can, if desired, be made. It is not my intention to describe these exercises in detail here, they can be found described and illustrated in the work mentioned before.

It is advisable to begin with new patients quietly, and to use at first the weaker exercises, and then, as their muscles improve, to give them stronger and more exacting ones. This sliding scale is easy to arrange, the mere position in which the exercise is taken often making the whole difference in its strength. Under this treatment the muscles rapidly harden and improve in tone, much more rapidly than the improvement takes place in the curvature, which the muscular improvement always definitely precedes.

I have spoken here only of spinal exercises, but in all the spinal cases others are also given, chest expansion exercises always, and abdominal muscle exercises often, when the abdominal wall is lax and flabby or constipation a troublesome feature.

¹ Dr. Anders Wide, 'Handbook of Medical Gymnastics.'

In the other groups of cases exercises are chosen suitable to each, the active-passive and passive-active neck exercises being specially valuable in cases of wryneck, and causing rapid improvement after operation.

The weight, pulley, and elastic resistance machines are used as adjuncts to treatment of these spinal cases, chiefly for exercising shoulder and posterior scapular muscles, and for chest-expansion and trunk-raising movements.

The more intelligent and better-to-do patients, with room at home, can be instructed to do these exercises at home, and to buy a Whitely exerciser. The great difficulty is to teach them sufficient care in posture and evenness of movement, but they certainly take more care when working at an exerciser or other mechanical contrivance than when performing "free-position movements" alone.

Results.—To judge these we may divide the spinal curvatures into three degrees of severity.

GROUP 1.—In which the spine can be entirely straightened by the voluntary muscular efforts of the patient alone. These cases rapidly improve, can take strong exercises from the first, derive much good from the drill and changing-position movements, and can be taught to keep up the exercises at home.

GROUP 2.—In which the deformity cannot be obliterated by any effort on the patient's part alone, but can be made to disappear by suspension in suitable position, and in bad cases by forcible moulding in addition. These are the cases that the Swedish exercises do most for. Home exercises, and mere free-standing movements fail, and may make matters worse, the stronger muscles acting on an uncorrected deformity and increasing it unless the patient is carefully watched. But the active-passive and passive-active resistance movements are designed to put in action first the muscles needing help, which are then acting at their best advantage from the position chosen, and if necessary with help of forcible moulding by the assistant. (The assistant is conscious all the time of the amount of work being done.) During these movements well carried out severe cases may be seen to entirely straighten, which neither patient alone by her muscles, nor assistant alone by mere moulding and

pressure, could correct. The cure in this second group is a long one, and beyond a certain point it seems impossible to get in some cases. Massage in these bad, yet still hopeful, cases is most important.

GROUP 3.—In this group permanent bony and ligamentous changes prevent any correction of the deformity, which remains rigid and unyielding. Forceful and strong muscular exercises can, I am certain, only increase the deformity in this group, owing to the great advantage at which the muscles on the wrong side are acting, an advantage which no dodging can deprive them of. In these cases, then, our sole object should be, by rubbing and really light exercises, to improve the general musculature, and then to fit a light spinal support to prevent the deformity from increasing.

A second great gain, in which these worst cases share even more fully than the slight ones, is in chest expansion, both increase in size and improvement of shape.

The actual circumferential measurement increases, but more important is the increased range of movement and capacity for inspiration and expiration. A spirometer, to measure the "extreme vital capacity," would indicate rapid improvement.

This increase of chest expansion is best shown in cases of adenoids and other naso-pharyngeal obstructions, only very marked types of which reach the department. No doubt in unilateral chest collapse the result would be equally good, but we have only had one such case to deal with.

The younger girls are nearly all suffering from general malnutrition, and bear the marks of earlier rickets. These need cod-liver oil, maltine, etc. The older girls are nearly all anaemic, though in some of the worst cases anaemia is entirely absent. Many are just about the period of puberty, and the rapid bust development has caused or increased the curvature. Too early, delayed, or irregular menstruation is common among them. Besides drugs, the abdominal exercises and massage are very helpful in this condition, except at the time of the period. The spinal muscles are not the only ones with loss of tone; the abdominal wall is slack and weak, and this is a great cause of constipation. Some of the younger girls with flaccid, prominent abdominal

walls, and sluggish dilated colon, have improved greatly under abdominal massage, and regular exercises of the abdominal muscles, so that purgatives can be entirely dispensed with. The improved bowel regularity corresponds with the improved musculature of the wall.

Some of the older girls seem to me to have started on the road leading to general enteroptosis, though too young to show the fully-developed condition. But among these young women, under the age of twenty-four in all cases, I have found three with very moveable kidney, and definite symptoms due to this. In others the foul tongue, eructations, and sickness, with the local signs pointing to dilated stomach to considerable extent, while the constipation with it is due to early enteroptosis. In these girls abdominal exercises do much.

With such a weak wall put to strong exercises, we might fear hernia ; but it is striking that in this whole series, with many very poor walls, I have not found one case of either inguinal or femoral hernia.

A similar number of men with walls of anything approaching the same poor quality, would give many inguinal herniae. The explanation will be their sex protecting them from inguinal, and their age from femoral, hernia, while they have not heavy lifting or straining in their occupations.

Iron, arsenic, and strychnine, are given to many of the girls during treatment, and the bowels are kept regular with drugs till they act unaided. Rubbing is done by the mothers at home, and the mothers are encouraged to see rubbing properly done at the class, so that they may imitate it at home.

During the class it is important for the girls to be kept brisk and on the alert, and, even when resting, not to be allowed to "flop" about.

The muscles of the spine and abdomen are not the only ones that give out, and flat-foot is also met with and treated both in a curative and preventive way in the drills.

Pain is complained of by many of the girls, generally dragging and aching in the loins and iliac regions. Most of them have less pain when taking the exercises, and several

complained of much more pain when the department was closed in the summer. A few have more pain after exercise, generally older girls with rigid spines. This pain must be carefully distinguished from pain due to pelvic causes, to moveable kidney, constipation, or any other abdominal condition.

I have only given exercises to two cases of caries, and these ankylosed cured cases, the exercises being given for chest development and general muscular improvement, and combined with massage.

In conclusion, the department has already been of service in many surgical cases, especially those of spinal curvature and adenoid obstruction.

The right line to develop its usefulness will be—

(1) To lessen the numbers of curvature cases constantly attending by eliminating the cases with marked bony changes, and by forming instructional classes for the slighter cases, so that they can quickly continue their own treatment at home. This would leave the Swedish exercises for the intermediate group to whom they are so essential.

(2) To form special classes at other times for mixed cases which can be treated by mechanical resistance machines alone, *e.g.* flat-foot, stiff joints, etc.

(3) To treat more medical cases, both thoracic and abdominal.

Much could be done for old empyemata, pleural adhesions and thickened pleura, collapse of lung, and such like cases, and perhaps even for more active, but chronic lung conditions.

Much also, I am convinced, for floating kidney, enterop-tosis, inveterate constipation with atony of bowel, and other vaguer conditions, neuroses in part, if not primarily so, and for which satisfactory treatment is so hard to find.

ON

DEATH OCCURRING DURING OR AFTER EXPLORATORY PUNCTURE OF LUNG.

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It has long been known that the accumulation of a large quantity of fluid within the pleural sac is occasionally the cause of sudden death, and to account for this various explanations have been brought forward ; thus it has been attributed to displacement of heart, to cardiac failure through over-distension of the right auricle and ventricle, to thrombosis of the pulmonary artery, etc. Wilson Fox¹ analysed thirty-two cases, and in twenty of these he considers the mode of death to be syncopal, and in six asphyxial ; in the remainder the cause of the sudden death was either doubtful, or death was due to other and more or less accidental causes. According to the same author, in about one half of the cases in which death occurs from syncope, some cardiac condition is present sufficient to account for the fatal termination.

It is further a matter of common experience that considerable distress, with symptoms of cardiac failure, may attend the removal of large pleural effusions, and that at

¹ Wilson Fox, ' Diseases of the Lungs and Pleura,' London, 1891.

times sudden death has occurred during the act. Wilson Fox collected seventeen cases in which death occurred within forty-eight hours of the operation and could reasonably be attributed to it; in seven of these syncope is assigned as the cause of death; in five asphyxia determined the result, and in three of these the symptoms after aspiration were attended by the expectoration of a large amount of frothy fluid; at the post-mortem examinations pulmonary œdema was usually present, possibly as the result of the rapid re-expansion of the lung. Of the remaining five cases, in one death occurred from pulmonary haemorrhage; in four death was preceded by a series of convulsions, and in three of these intra-pleural injections had been used; in the fourth, in which death took place after the patient had been placed in a bath, meningeal haemorrhage was found at the autopsy.

Finally, Wilson Fox concludes—"That in a limited number of cases fatal syncope may ensue from the withdrawal of even a moderate amount of fluid from the pleura, without any demonstrable organic lesion being present to account for death; but that the relative danger of the event is enhanced by age (past middle life), by exhaustion, anaemia, and alcoholism; and that it is predisposed to by the sitting posture assumed during or shortly after the operation, while in others it may be simply the result of shock. In a limited number of cases it may result at later periods from thrombosis, or from unexplained causes."

Lewen¹ suggests that the death may be due to bulbar irritation following irritation of the nerves of the lung, and especially of the vagi.

Other cases of sudden death have occurred after the operation of resection of rib for empyema. In these cases the accident has not infrequently been brought about during the washing out of the empyema cavity, particularly when a syringe has been used for the purpose; and it has been the unfortunate experience of the writer to have had such a fatality occur whilst washing out a pleura, in which the same procedure had taken place for days in the routine dressing of the case, without any signs of danger. A similar case was

¹ Lewen, 'Gazette des Hôpitaux,' Nov. 21st, 1876.

reported by Dr. Cayley.¹ Here also the empyema cavity had been repeatedly washed out and injected with iodine. On the last injection the patient became suddenly unconscious, and remained so till death occurred sixteen hours after the seizure. In this case convulsions occurred with rigidity of limbs.

These various dangers are well recognised, and cautions are given concerning them in the text-books; but it is not so generally recognised that the same untoward result may follow the simple operation of exploratory puncture of lung substance.

For permission to publish the following cases I am indebted to Dr. Sharkey for the first; to Dr. Payne for the second; and to Dr. Acland for the third, which occurred at the Brompton Hospital.

CASE 1. Sudden death during exploratory puncture of lung.—S. C., æt. 8 years, female, admitted June 4th, died June 14th, 1900.

Previous history good with the exception of an attack of "inflammation of the lungs" at the age of six years.

On the morning of the day of admission the child had some difficulty in breathing, she coughed, vomited, and complained of headache.

On examination—resonance was impaired over the front of the upper lobe of the right lung; posteriorly the note was dull down to the angle of the scapula. Tubular breathing and a few crepitations were audible over the dull area both behind and in front. A friction-rub was present at the base. On the left side only a few scattered râles were audible. Respirations 40 per minute. Temperature 102·6° F. Sordes on lips.

By June 6th the physical signs had practically cleared up from the right lung, but on the left side dulness developed at the base with crepitations, tubular breathing, and a friction-rub.

The highest temperature occurred on June 5th (104° F.).

On June 8th the temperature dropped suddenly from 102·2° to 97·8°, and remained normal for nearly thirty-six hours.

¹ 'Transactions of the Clinical Society,' 1877, vol. x, p. 16.

On June 9th a purulent otorrhœa (left) occurred, the pus containing pneumococci.

The temperature rose again on the night of June 9th, and the physical signs still persisted at the left base, comprising dulness, tubular breathing, and moist sounds.

On June 14th it was decided to explore the affected area, and an aspirating needle was accordingly inserted in the ninth intercostal space one and a half inches from the spine, for a depth of about two inches ; no fluid was obtained, and only a drop or two of blood. Only one puncture was made, and the whole process took about a minute. A small amount of frothy blood appeared at the mouth and nose. Immediately after the withdrawal of the needle the child was observed to have lost colour, or rather to have a livid appearance, with a strong double convergent squint, and some rigidity of arms. The pulse could not be felt and the heart sounds were inaudible to the stethoscope. Ether, brandy, and strychnine were injected subcutaneously, and two pints of normal saline were infused into the femoral vein. Breathing continued irregularly for a minute or two, the respirations being slow and gasping ; then it ceased. Artificial respiration, which was kept up for half an hour, was of no avail, though for perhaps five or six minutes it evoked spontaneous attempts at breathing. The pulse could not be felt after the onset of symptoms.

Post-mortem.—The right pleural sac was healthy ; the left was obliterated by universal old dense adhesions. The right lung was practically normal. The left was much less bulky than the right and much heavier. It had a smooth marbled appearance on section. All the connective-tissue septa were very apparent, and especially so at the root of the lung. The bronchial tree of this lung was everywhere full of thick pus, and the smaller bronchioles appeared to be both dilated and thickened. At the base of the lung shotty nodules could be both felt and seen beneath the pleura ; on cutting into these they proved to be small purulent collections, and in every case a bronchiole could be found entering the cavity. The cavities were in part formed by lung substance beyond the bronchioles.

The bronchial glands were enlarged and succulent. In a

glaud at the bifurcation of the trachea a small caseous deposit was found. There was no other sign of tuberculosis in the body.

The appearance of the left lung suggested acute changes supervening in a lung already bound down as the result of antecedent disease and becoming fibroid.

The remaining viscera showed no sign of disease. Both middle ears contained pus, but the brain was normal.

CASE 2. Broncho-pneumonia and pulmonary collapse ; exploration of lung with hypodermic syringe ; collapse and convulsions ; death five days later.—F. J. S—, female æt. 7 years, admitted March 7th, died March 13th, 1898. Three of her brothers and sisters had died of bronchitis in infancy. The patient had bronchitis at the age of six, and measles eight months before admission.

Her illness was of three weeks' duration, and commenced with cough. She was treated as an out-patient for a fortnight and then admitted. When examined there was dulness at the base of the right lung, and the signs generally were suggestive of a collection of pus. Temperature 99.2° F.

On March 8th, at 11.30 a.m., an exploring needle was inserted into the right base. No pus was found, but a very small quantity of clear fluid exuded with a few drops of blood. During the exploration the child lost consciousness, was stated to become very pale on the right side of the face, and also slightly cyanosed. Ether was injected subcutaneously and stimulants administered. At 1.30 p.m. she had a convulsion, and convulsions occurred frequently during the afternoon.

On March 9th her pulse was 132 and weak; head retracted; respirations 40; and she was still practically comatose.

By the 11th the retraction of head had almost disappeared; she was irritable, resented all interference, and passed her evacuations into the bed; pulse 72.

On the 12th her pulse was 138, respirations 36. Tubular breathing could be heard at the right apex; her breath was foul, and she was unconscious.

On the 9th her temperature rose to $105\cdot 2^{\circ}$, by sponging it was reduced to $102\cdot 2^{\circ}$, but rose again to 105° . It dropped to normal on the 11th, and rose to $104\cdot 2^{\circ}$ before death on March 13th.

Post-mortem.—The pleural sacs contained no fluid and were free from adhesions. Pericardium normal. The bronchial glands were swollen but not tuberculous. The larynx was normal; the trachea and bronchi contained a large amount of thick purulent secretion. The base of the lower lobe of the right lung was collapsed, while there was bronchopneumonic consolidation of a portion of the upper part of the same lobe. Islets of consolidation were scattered also in the right upper lobe and in the left lower lobe. The heart, liver, kidneys, and spleen were normal. Peritoneum normal.

Brain.—The special feature of the appearance of the brain was its vascularity. There were a few small superficial haemorrhages in the pia mater, and the vessels over both hemispheres were much injected. On section the white matter had a pinkish colour, and there were numerous red spots where vessels had been cut across. The lateral ventricles were undistended and contained no excess of fluid. The vessels at the base and in the Sylvian fissures were healthy.

CASE 3. Old pulmonary tuberculosis; chronic left basal pneumonia; exploratory puncture; syncope, convulsions, left hemiplegia; death three days later.—J. R., male æt. 52, clerk, under the care of Dr. Acland at Brompton Hospital; admitted June 14th, died June 17th, 1890. There was no family history of any chest affection. The patient had always had good health, but thirteen years previously he had an attack of haemoptysis.

He first came under notice on June 4th as an out-patient, complaining of bronchitis of three weeks' duration.

On admission there was a limited area of impaired resonance at the left base, reaching up as high as the seventh dorsal spine, and outwards to the angle of the scapula when the arms were folded. Over this area definite amphoric breathing, whispering pectoriloquy, and ægophony were audible. Under the impression that there was an en-

cysted collection of fluid at the base of and compressing the lung, a puncture was made just under the angle of the scapula between the eighth and ninth ribs with an exploring needle. The needle was inserted for about an inch and a half, and seemed to penetrate a solid substance ; no fluid being withdrawn, a second puncture was made one intercostal space lower, and one drachm of blood with some light streaks in it was easily withdrawn. On asking the patient if it gave him any pain he replied quite naturally, "I hardly felt it;" he then almost immediately passed a large quantity of urine, turned pale, and fell backwards. Respiration ceased entirely at once ; the heart beat most irregularly and spasmodically, and the radial pulse was not to be felt. Ether was injected subcutaneously, the interrupted current was applied and artificial respiration was maintained for half an hour. He then had a fit in which the left arm became firmly flexed at the elbow, the thumb flexed into the palm, the fingers over the thumb, and the hand flexed at the wrist. The left leg was not affected. The eyes were deviated to the right and the pupils widely dilated. When examined a few hours later he was still unconscious ; the eyes moved only to the right, and the pupils reacted very sluggishly, if at all, to light. The conjunctival reflex was present ; fundi normal. He would not answer questions, and kept repeating "Oh dear me." His cough was troublesome, but there was no expectoration. He frequently vomited a brown viscid fluid. The left side of his face was slightly less wrinkled than the right ; the left arm at times moved slightly, and then would become rigid and flexed ; the left leg was rigid, the knee-jerk was exaggerated, and ankle-clonus was obtained with difficulty. There was also slight left-sided anaesthesia. The right arm was moved up and down occasionally. His pulse was 96 ; respirations 36, shallow, and slightly gasping. Temperature 100·4° F.

On the morning of June 15th his pulse was 150, temperature 100·6° F. There was now obvious left hemiplegia, with much twitching of the muscles of the left side of the thorax and abdomen. Coarse crepitations could be heard over the area at the base of the left lung. In the evening the condition of the left arm and leg was the same ; the right arm was

rigid and flexed, the right leg was extended and constantly twitching; ankle-clonus was obtained on both sides—more briskly on the right. He had been able to swallow a little milk during the day. The urine contained a trace of albumen.

On the morning of June 16th he was still unconscious; the left hemiplegia and anaesthesia still persisted; the right arm was rigid with clonic spasms; ankle-clonus was absent, and the knee-jerk could not be elicited on either side. Urine was passed unconsciously, and he coughed occasionally.

Several convulsive seizures occurred during the evening; the arms were rigidly flexed across the chest, with twitching movements in both; there was much grinding of teeth and clenching of jaws; the head and eyes were moved from side to side. The left leg was somewhat rigid, and there was much twitching of the foot; both knee-jerk and ankle-clonus were obtained. The right leg was very rigid, with twitching of foot; knee-jerk brisk. The left optic disc was apparently swollen and blurred, with one flame-coloured patch; the right cornea was hazy, and the disc looked blurred. The temperature rose to 101° F. before death, at 11 a.m., June 17th.

Post-mortem examination.—Localised adhesions were present over the lower lobe of the left lung, corresponding in position to the three lower ribs, with a rough shaggy condition of the pleura over the rest of the lower lobe around the adhesions. The right pleura was healthy. In the upper lobe of the left lung, which was œdematosus, were a few scattered pigmented fibrous nodules. The lower lobe was moderately contracted and solidified, and its base was firmer in texture than its upper part. The consolidation was rather firm, particularly towards the vertebral aspect of the base, but no distinct fibrous bands were present. On section this part was of a dull red colour, marked with irregular patches of pigment; its surface was moist and even. One small dull red infarct was situated at the anterior part of the lobe.

In the right lung the upper lobe was moderately emphysematous, and a calcareous mass was present at the apex; three or four fibrous knots were scattered through the same lobe, with one fibro-calcareous patch in the lateral region. A few scattered fibrous patches were present in the lower lobe.

The mediastinal glands were small, pigmented, and hard. One tracheal gland on the left side was slightly enlarged, irregularly fibrous, and contained in one part a small collection of thin yellow pus.

The heart weighed eleven and a half ounces. The aortic, mitral, and pulmonary valves all showed slight thickening. There was marked fatty spotting of the muscular substance of the right ventricular wall, the degeneration extending deeply into the substance of the muscle. On the left side the muscle was slightly paler than normal. The coronary arteries were slightly atheromatous; a few small patches of atheroma were present above the aortic valve, but the aorta otherwise appeared particularly healthy. A small ulcer was present in the right side of the larynx. One kidney contained a recent reddish infarct. The liver was slightly nutmeg.

Brain.—The pia mater generally was slightly opaque. The dura also was slightly thickened, but there were no morbid adhesions. The vessels at the base of the brain were healthy. The brain tissue was fairly firm, and no obvious lesion could be detected in any part.

Remarks.—In all three cases the immediate onset of the symptoms during the exploration allows of no doubt as to the relation between the puncture of lung and the syncopal attack being one of cause and effect, and in the absence of any such event as embolism or thrombosis the effects produced can only be explained on the supposition of reflex action. In the first case, in which death was practically instantaneous, the striking features were profound cardiac and respiratory inhibition; in the third case, also, the radial pulse could not be felt, the heart beats were spasmodic and irregular, breathing ceased, and was only restored by artificial respiration. In the second case the condition of the heart and respiration is not recorded. The explanation of these facts is not so obvious. It is well known that any very severe sensory impression may cause sudden death, but only when severe pain or an extreme degree of injury has been inflicted. In the cases in question the injury inflicted by the exploring needle was of the slightest, and it can be stated with confidence that a much greater degree of pain in-

flicted, for instance, on a limb, would not have produced a fatal result. In the first case complete reflex inhibition of the heart was produced, no trace of cardiac contraction being evident after the puncture—the symptoms, in fact, that are produced when the vagus nerve is strongly stimulated. How, then, can this be produced when the lung is punctured far away from the main vagus trunk? The slowing and arrest of the heart that occur when the peripheral end of the divided vagus nerve is stimulated are fundamental facts in the physiology of the circulation, and it is also as well known that the same inhibition can be induced if the central end of the divided vagus be stimulated, the reflex path passing up the vagus to the medulla and down the remaining intact vagus.

In some experiments¹ performed by the author, in conjunction with Dr. Brodie, at the laboratories of the Royal Colleges of Physicians and Surgeons, with the object of ascertaining which of the afferent fibres of the vagus cause inhibition of the heart when their central ends are excited, it was found that the pulmonary fibres were by far the most effective in this respect. If the root of the lung be exposed in an animal and any of the pulmonary branches stimulated, a typical arrest of the ventricular contraction, as shown by the blood-pressure record, is produced. At the same time marked arrest of respiration occurs from excitation of the respiratory centre. The vaso-motor centre is also inhibited, and produces a further fall in blood-pressure, apart from that due to the cardiac inhibition, as proved by the fall in blood-pressure produced in an animal whose cardio-inhibitory fibres have been paralysed by atropine.

These results are almost precisely similar to what occurred in the above cases, and there seems little room for doubt but that the results must be attributed to stimulation of the pulmonary fibres of the vagus nerve. Inasmuch as puncture of the lung is a common procedure, and usually attended with no dangerous symptoms, it is obvious that some other factor is involved, for in any puncture of lung some vagus fibres must be injured. In each of the

¹ 'Journal of Physiology,' 1900, vol. xxvi, p. 92. "On Reflex Cardiac Inhibition."

three cases above recorded the illness was of some duration, and it is conceivable that the vagus fibres by compression or inflammation are rendered unduly sensitive, and that a stimulus which in a healthy nerve would be ineffective might in its diseased condition produce a reflex inhibition largely in excess of the normal. In the first case the post-mortem examination showed the presence of acute inflammatory changes supervening in a lung undergoing fibroid change from antecedent disease. In the second case the main change in the portion of lung which had been punctured was merely collapse, but there were scattered islets of broncho-pneumonia elsewhere, and there was a history of three weeks' illness. In the third case the affected portion of lung was tougher than normal, and the pathological changes evidently of some duration.

In the third case the hemiplegia was rather suggestive of embolism, and such cases have been recorded; but in the absence of any embolus or patch of softening at the post-mortem this view must be dismissed.

It seems reasonable to attribute the symptoms to the puncture of lung rather than of pleura, for in the passage of the needle through the two thin layers of the pleura it is improbable that any vagus fibres would be affected, while in the passage of the needle for an inch or more into the lung tissue such could scarcely be avoided. And in view of the countless number of aspirations of fluid, it is evident that there is no danger in puncturing the pleura.

The deaths that have occurred during the aspiration of pleural accumulations are probably to be explained by the rapid re-expansion of the lung stretching the vagus filaments, and this would possibly occur more forcibly if the lung, from long compression, had become tougher and less expansile.

The fatal results that have occurred when washing out a pleural cavity after the operation for empyema would seem explicable when one considers the very large pleural and pulmonary surfaces involved, in which presumably large numbers of vagal fibres exist. However, in the experiments above alluded to no effect could be produced, though electrical, mechanical, chemical, and thermal forms of excitation of the pleura were employed.

It would seem, therefore, that in all cases of sudden syncopal symptoms, fatal or temporary, occurring in the course of pleural effusions, or during or shortly after operative interference on such, or during exploratory puncture of lung, the symptoms are due to afferent impulses conveyed along the vagus nerve to the medulla. Of the three cases of exploratory puncture of lung, in the first the cardiac inhibition was so complete that death was instantaneous. In the second and third the inhibition was also very marked, but not irrecoverable. The unconsciousness and convulsions that occurred, in view of the suddenness of onset and absence of any gross cerebral lesion (see post-mortem examination), are doubtless to be ascribed to the cerebral anaemia brought about by the extreme lowering of the blood-pressure.

It has been known from the earliest days that important symptoms attend the experimental cutting off of the circulation from the brain, and these results are of great interest in this connection. Leonard Hill,¹ as the result of a large number of experiments, comes to the conclusion that "the immediate effects of ligature of the cerebral arteries in different species of animals is as follows :—Horses and goats die from the effects of ligature of the carotids only. Immediate death occurs in the greater number of rabbits from ligature of the four cerebral arteries. In the case of cats, one third die and two thirds survive. Dogs all survive, and monkeys survive during the few hours they have been kept under observation." That the dog survives so readily is probably due to the fact that in this animal there are anastomoses between the basilar and anterior spinal arteries with the intercostal and deep cervical vessels.

The mode of death in rabbits was as follows :—"Spasms, rise of blood-pressure, ineffectual respiratory gasps at long intervals, fall of blood-pressure, and death form the sequence of symptoms. If at the moment of ligature the blood-pressure be low and the cerebral circulation feeble no spasms will then occur. The blood-pressure will not rise; there simply follows cessation of respiration and a fall of the blood-pressure to zero."

In cats or monkeys tonic spasm is produced by ligature

¹ 'The Physiology and Pathology of the Cerebral Circulation,' London, 1896.

of the four cerebral arteries, which is increased by the injection of absinthe. Then, if the clamp or ligature be loosened on a carotid, so that blood flows back to the hemisphere, clonic spasms almost immediately occur.

These phenomena are strikingly similar to those that occurred in the above cases. In the first, though death was almost instantaneous, yet spasm was produced, convergent strabismus and rigidity of arms being well marked. In the second case, though no tonic spasm was noted, yet two hours after the puncture a convulsion took place, which was the precursor of a series of fits, and it seems reasonable to assume that this was due to the increasing freedom of blood flow through the brain. In the third case, also, irregular twitching of muscles was an obvious symptom.

Clinically, ordinary syncope is doubtless due to a temporary slight failure of the circulation through the cerebral hemispheres.

It is well known that serious and even permanent symptoms may follow the ligature or compression of one carotid artery. "Schiff by compression of his own carotid produced spasms on the opposite side of his body, preceded by a sense of numbness and formication." Leonard Hill twice produced clonic spasms in himself by compression of one carotid :—"The first effect on applying the compression was a sensation in the eye of the same side; then there followed a sensory march of formication down the opposite side of the body. This began in the fingers, spread up the arm, then down the leg. Finally, clonic spasms of the hand occurred, accompanied by an intense feeling of vertigo and alarm." He further states that "on occlusion of one carotid, compensation by the circle of Willis is undoubtedly not immediately complete; . . . and Horsley and Spencer¹ have seen the same thing in monkeys, for on ligaturing one carotid after exposure of the brain, the pia mater pales on the side of the ligature, and the cortex becomes far less excitable to the faradic current. In an hour or so the circulation and excitability are restored."

All the facts, therefore, that can be gathered from clinical and experimental evidence are in accord with the view that

¹ Horsley and Spencer, 'Brit. Med. Journ.', vol. i, 1889, p. 457.

the unconsciousness and fits attending the onset of the symptoms depend upon the severe degree of cerebral anaemia produced, as described, by the cardiac inhibition and lowered pressure induced by the stimulation of the cardio-inhibitory centre in the medulla, *via* the pulmonary branches of the vagus nerve, during the puncture of the lung substance.

Dr. Cayley,¹ after citing his own case, quotes several from French authors in which, after washing out an empyema cavity recurring convulsions preceded death, and discusses the hypothesis that "the convulsions are reflex and due to irritation propagated from the pleura to the bulb," but urges against it that the operation was only fatal after being repeatedly performed, and that the pleural sac ought not then to be very sensitive, being the sac of a chronic abscess.

The connection of the respiratory tract with the cardio-inhibitory centre is very close, and is considered in detail in the paper on "Reflex Cardiac Inhibition" already mentioned,² where the earliest experiments and literature are referred to. Thus stimulation of the nasal mucous membrane at once arrests the heart. Kratschmer³ and François-Franck⁴ were able to produce reflex arrest of the heart and respiration by the use of irritant vapours such as carbonic acid, ammonia, chloroform, etc. François-Franck first described the reflex inhibition produced by stimulation of the superior laryngeal nerve. We were able to confirm all these experiments, and, in fact, the effect produced by stimulation of the superior laryngeal nerve is almost as great as that obtained by stimulation of the pulmonary vagal fibres. This sensitiveness of the superior laryngeal nerve is probably the explanation of the fact that compression of or blows on the larynx are so liable to produce alarming syncope. Brouardel⁵ relates a case in which sudden death was caused by a boy playfully striking an old woman on the pomum Adami.

We were unable to obtain any reflex from the mucous membrane of the trachea or large bronchi. Brouardel, how-

¹ Loc. cit.

² Loc. cit.

³ Kratschmer, 'Sitz. d. k. Akad. Wien,' lxii (ii), p. 147, 1871.

⁴ François-Franck, 'Trav. de Lab. de M. Marey,' ii, p. 221, 1876.

⁵ Brouardel, 'Death and Sudden Death,' Eng. trans., p. 173.

ever, states as a fact that sudden death has occurred on the removal of a tracheotomy tube from the trachea, but attributes it to laryngeal spasm; if that were the mode of death the cases would probably come under rather a different category.

It is interesting to note that the reflex inhibition can be produced just as readily by stimulation of the alveolar nerves by means of irritant vapours, such as bromine, ammonia, formaldehyde, etc., as by direct excitation of the nerve-trunks at the root of the lung.

In the second and third cases, though the immediate symptoms were very similar to those occurring in the first, yet they were to a certain extent recovered from. It is of special interest, however, to note that far from complete recovery ensuing, the patients never even regained consciousness, and symptoms indicative of grave cerebral disturbance persisted until death, from which it is obvious that a much more permanent change was brought about than a mere transient, reflex, cardiac inhibition.

In the second case a series of convulsions occurred on the day of the puncture; on the following day there was retraction of head, and consciousness was never regained. In the third case the symptoms of cerebral disturbance were still more marked; a convolution occurred half an hour after the puncture; the patient never regained consciousness; left hemiplegia and hemianæsthesia developed with occasional twitching of muscles, especially of the right side. For the production of such symptoms as these there must evidently be some permanent lesion of the cerebrum. The condition of the brain in each case, as observed at the post-mortem examination, is therefore of great interest.

In the first case it is simply described as normal. In the second, in which death occurred after five days, the vascularity of the brain was noted as a special feature; there were a few small superficial haemorrhages in the pia mater, and the vessels over both hemispheres were much injected. On section the white matter had a pinkish colour, and there were numerous red spots where vessels had been cut across. The lateral ventricles contained no excess of fluid, and the vessels at the base, and in the Sylvian fissures, were healthy.

It is, of course, necessary to be very guarded, lest too great importance be attached to the degree of vascularity of a brain as observed on the post-mortem table, inasmuch as the position of the head after death plays so important a part in the blood distribution ; but making all allowance for this, one cannot avoid the conclusion that in this case the brain was unduly and pathologically overfilled with blood.

In the third case the dura mater was described as being slightly thickened but without morbid adhesions, and the pia mater as slightly opaque ; the vessels at the base were healthy, the brain tissue was fairly firm, and no obvious lesion could be detected in any part. The condition of the pia and dura can almost certainly be neglected, as having no connection with the symptoms.

In all cases, then, there was no gross lesion of any kind in the brain. In the first case, in which death was practically instantaneous, the cerebral circulation simply came to an end, and we could not expect to find any abnormal change in the brain. In the second and third cases, however, in the absence of any coarse lesion, the only change competent to account for the more remote symptoms must have been situated within the cortical cells—a nutritional lesion in fact, and the only conceivable mode of production of such a change is that the cardiac inhibition and the resultant cerebral anaemia were sufficiently marked and sufficiently prolonged as to inflict an irrecoverable amount of injury on the neurons.

In those dogs whose carotids and vertebral arteries had been ligatured by Dr. Hill, marked paralytic and mental symptoms were produced. The brains of twelve of these animals were examined by Dr. F. W. Mott,¹ and he describes the very definite degenerative changes undergone by the cortical nerve-cells. Dr. Mott also made the very interesting observation that swelling of the nerve-cells with chromolytic changes may come on within less than ten minutes after ligation of the four cerebral arteries, for occasionally one of Dr. Hill's dogs or cats died from the

¹ Croonian Lectures on the "Degeneration of the Neurone," Lecture II, "Lancet," June 30th, 1900.

effect of the anæsthetic very shortly after the four arteries had been ligatured. That these changes were not due to the anæsthetic he proved by examining the brain tissues of animals which had died from the anæsthetic before any of the arteries were tied, and these showed no changes. Dr. Mott remarks that "we may, therefore, consider that the changes noted are due to the cessation of the circulation." In the animals in which collateral circulation was not restored soon enough to prevent destructive changes in the nerve-cells, the changes were very much more marked.

Dr. Mott, in describing the condition of the brains of animals in whom the cerebral arteries had been ligatured, states¹ that "in most of these brains experimented on a striking naked-eye feature was the distension of the veins of the cortex with blood, and frequently there was sub-pial haemorrhage." An identical condition was present in the brain in Case II (see account of post-mortem examination), forming an additional argument in favour of the later symptoms being due to degeneration of the neurones caused by the cerebral anæmia resulting from the cardiac inhibition.

It is unfortunate that portions of the brains of the three fatal cases under discussion were not preserved for microscopical examination, but the remoter symptoms in the two cases which survived the immediate effects of the puncture of lung must in all probability have depended on such changes in the nerve-cells. That both cases died probably depends on two causes: firstly, the cardiac inhibition and the lowered blood-pressure would affect every vessel in the brain and body, and while the inhibition persisted there could be no possibility of any collateral circulation assisting the supply of blood to the brain; secondly, it is probable that the human cerebral cortical cell is more sensitive than that of the dog or monkey, and less able to withstand any circulatory failure such as occurred in the above cases.

As regards the question whether any precautions can be taken to avoid the repetition of these fatalities. Inasmuch as exploratory puncture is only performed in cases in which from the course of the symptoms the presence of pus is suspected, and in which, if present, improvement is unlikely

¹ Mott, loc. cit.

to occur unless it is evacuated, the propriety of the operation cannot be questioned.

Prevention, then, is limited to taking every precaution to relieve the circulation as far as possible from every strain during the operation. The sitting posture should therefore be avoided. It is very doubtful whether the risk would be diminished by giving an anaesthetic, for the function of these afferent vagal fibres is not likely to be abolished during anaesthesia.

Should syncope occur, and inasmuch as arrest of respiration is one of the cardinal symptoms, artificial respiration should at once be resorted to, and will materially assist the circulation. The cerebral circulation would probably be assisted by allowing the head and chest to hang over the edge of the bed.

Injections of ether and strychnine must be valuable as cardiac stimulants, but intra-venous infusion of saline is of more doubtful value, as it takes much time, and in any case should not be allowed to impede the other methods mentioned.

Another case of sudden death during paracentesis occurred at St. Thomas's in 1890,¹ but has not been included in the above series as it presented special features. The patient was a boy aged nine years, who was admitted under the care of Dr. Bristowe with dulness and signs of fluid at the left base. An aspirating needle was inserted; after withdrawing the trocar there was a delay of a few seconds before the tube from the vacuum bottle was connected with the cannula, and during these few seconds clear fluid escaped freely, but on opening the stopcock no fluid was drawn out. At this moment clear frothy fluid began to pour out of the boy's mouth with hardly any coughing, and in a few seconds quite three to four ounces were collected in a porringer. His lips became blue, the pulse feeble, and the cannula was withdrawn. Subcutaneous emphysema developed all over the left side, and on percussion the left side of the chest was found to be quite resonant. A trocar and cannula were introduced in the left anterior axillary line and pent-up air at once issued. Respiration ceased,

¹ 'St. Thomas's Hospital Reports,' 1890, "Abstracts of Medical Cases."

but the heart continued to beat. Artificial respiration was employed, but the heart ceased beating in about seven or eight minutes after the puncture.

At the post-mortem examination a collapsed hydatid cyst was found lying free in a cavity in the lung formed by compression ; the cavity, which was of about the size of the closed fist, was collapsed ; the main bronchus opened into it by a good-sized orifice, and there were also other smaller openings into the lung. The hydatid presented a single small orifice like that which would be made by a fine needle, and another larger rent with ragged edges.

In this case the needle apparently passed merely through thickened pleura into the cyst cavity, and the fluid which escaped was evidently the fluid contents of the hydatid cyst. The hydatid cyst was found at the post-mortem examination to be ruptured—a not uncommon event after tapping such cysts. The course of events was probably that as the hydatid cyst contracted on escape of some of its contents through the cannula, it ruptured. The hydatid fluid would then escape into the containing lung cyst and could be expelled through the patent bronchus ; in this it might be aided by the intra-pleural pressure, which was higher than that of the atmospheric air, as shown by the fact that pent-up air issued from a cannula introduced into the axilla. This point is of considerable interest, as numerous cases have been reported in which albuminous fluid is coughed up in large amount after aspiration of pleural effusions. Terrillon¹ collected about thirty of such cases, and a case is also reported by Dr. Samuel West.² In these cases the expectoration rarely comes on during the aspiration, but subsequent to it, and usually within an hour. Dr. West agrees with the opinion, and apparently the evidence is conclusive, that the cause of the condition is a rapid œdema of lung. The case of hydatid of lung mentioned above, for the reasons given, and also from the immediate onset of the symptoms, probably does not come under the same category, the symptoms depending on the aspiration of the

¹ Terrillon, "De l'expectoration albumineuse après la Thoracentèse," "Thèse inaug.," Paris, 1873.

² "Transactions of Clinical Society," vol. xxix, p. 169.

hydatid fluid through the bronchial system. This, and the development of marked pneumothorax, would be sufficient cause for death without any reflex inhibition, though it is possible that such may have occurred as well.

SUPRA-PUBIC EVACUATOR:

AN IMPROVED FORM.

By EDMUND WHITE, B.Sc.,
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IN the year 1897 my attention was directed by Mr. Walter Edmunds, at that time Medical Officer at St. Thomas's Home, to two devices for removing urine from the bladder through a supra-pubic incision. At his request I fitted up several arrangements of a similar kind, and since that time I have modified and made additions to the original device which were suggested by the experience gained on a large number of cases. By this means I have succeeded in completing an apparatus which appears to answer admirably in withdrawing the contents of the bladder continuously and certainly with the minimum amount of inconvenience to the patient, and which requires little attention on the part of the nursing attendants. The original devices to which I have referred (see 'Brit. Med. Journ.', 1895, ii, 968) consisted in one case in employing a Geissler suction-pump, of the type commonly used in laboratories, to withdraw the fluid. The pump was attached to the water-supply over a sink, the side arm being connected to a rubber tube, whose distal end was inserted into the bladder through

the supra-pubic orifice. When the water-supply was turned on the rush of water through the pump created a partial vacuum in the side tube, and if the far end of this tube was beneath the surface of the fluid in the bladder, this fluid was driven into the tube by atmospheric pressure. Passing through the tube, the fluid was forced over into the pump, and, mixing with the water passing through, was carried off with it into the sink. It may be here observed that this method involves the use of a considerable quantity of water, and can only be applied when the patient's bed is in close proximity to a water-supply. Attempts made to supply the water from a vessel placed on a shelf, or from an irrigator vessel suspended from the wall, did not yield satisfactory results for two reasons : (a) the vessel required so frequently re-filling, and (b) the Geissler pump only yielded satisfactory evacuation when a considerable head of water was available. The second device was to employ a Y tube with the lower limb prolonged. Water supplied from a vessel placed above was allowed to flow into one of the upper limbs, and by the fall of the column of water formed in the prolonged lower limb a partial vacuum was produced in the other upper limb. This was placed into communication with the bladder by means of flexible tubing, and the contents drawn over and carried off by the water as before. This arrangement required less water than that with the Geissler pump, and so far was an improvement, since it was available even in the absence of a water-supply and sink. The water-supply, however, still required frequent renewal, and the removal of the mixture of water and urine passing away also demanded considerable attention. Both arrangements, in fact, only worked well with constant supervision, being liable to fail from causes sufficiently obvious to those familiar with such arrangements, as well as from the primitive method of connection with the bladder. This connection was secured by passing the end of the rubber tube into the bladder and securing it in position by means of a tape passing round the patient's body, or by attaching the end of the rubber tube to a glass tube with a perforated rose-end, which was passed into the bladder through the supra-pubic orifice. The difficulties which were experienced in applying this method of

evacuation, and which were common to the two arrangements described were, firstly, the supply of sufficient water to secure adequate evacuation, which to give the best results, must be continuous in action, so that during the whole twenty-four hours urine can only rise to a slight height above the floor of the bladder, and never accumulate sufficiently to escape through the abdominal incision either by bladder contraction or through the patient's movements; secondly, the impossibility of collecting the urine apart from the water, for purposes of measurement or examination; thirdly, the imperfect establishment of connection with the interior of the bladder which would ensure removal of its contents and at the same time admit of easy cleansing or clearing in case of stoppage from clots or deposits in the urine. With the Geissler pump, also, it sometimes happened that a considerable reduction of pressure occurred in the tube leading to the bladder if the end of the tube in the bladder became partly or wholly stopped. If this stoppage suddenly gave way, a rush of urine from the bladder occurred, also suddenly, and gave rise to much discomfort. The modifications and improvements subsequently introduced may be discussed more clearly by considering them under three headings, viz. :

1. The pump.
2. The separate collection of the urine.
3. The bladder connections.

1. *The pump.*—The Geissler pump having proved unsatisfactory, for the reasons already discussed, I proceeded to try the numerous other forms of water-pump which will be found illustrated in catalogues of chemical apparatus. Without detailing the individual results of these experiments, I may state at once that they led to results no more satisfactory than those already attained. By attaching a piece of tubing to the lower end of some of the pumps, and thus utilising the fall of the column of water contained therein to produce the vacuum in place of the "head" of water, which is the usual mode of employment, somewhat better results seemed to follow in regard to the quantity of water required. But I found that when employed in this manner

the production of the desired vacuum was uncertain, and sometimes failed altogether. Without discussing minutely the mechanical causes of this failure, I may state briefly that it appeared to be due to the fact that all the available forms of water-pump were constructed to yield a high degree of exhaustion, necessitating a considerable "head" or fall of water, and that they could not be made to yield the low exhaustion required for the purpose under discussion with a correspondingly diminished supply of water. A little consideration will show that to raise the urine from the lowest part of the bladder through the supra-pubic opening a pressure equal to six inches of water (rather less than half an inch of mercury) would be usually sufficient, while for exceptional cases, and allowing for the mechanical difficulties due to viscosity and deposits, a pressure equal to twelve inches of water would meet all requirements. I therefore proceeded to devise a pump which would give the required low degree of exhaustion with the minimum supply of water. After numerous experiments this was accomplished in the manner shown in the accompanying sketch (Fig. 4). The pump consists of a narrow tube terminating in a small orifice below, sealed into a larger tube with a side arm, B. The outer and larger tube is contracted below, and to it is attached about two feet of narrow rubber tubing terminating in a piece of fine lead piping bent round as shown; this is to prevent entry of air to the pump from below. The end, A, is connected with a vessel containing water by means of rubber tubing, and the flow of water can be regulated by a pinch-cock. The water issuing from the fine orifice of A falls into the constricted neck below, and the diameter of this outflow tube is so small that successive drops of water falling into it carry down bubbles of air which cannot pass upwards through the water separating them, owing to the fineness of the bore, which causes the drops of water to form a continuous film across the lumen of the tube, thus occluding the tube and preventing the air-bubbles passing upwards. As each drop of water descends it therefore carries down the air, which is finally expelled below. The essential point to observe is that the water must fall *in drops*, and the end of the tube A and the entrance to the narrow

tube below are so far removed that the fall of distinct drops may be observed. If the pinch-cock be so far closed that the drops of water fall at the rate of 50 to 100 per minute,

FIG. 4.

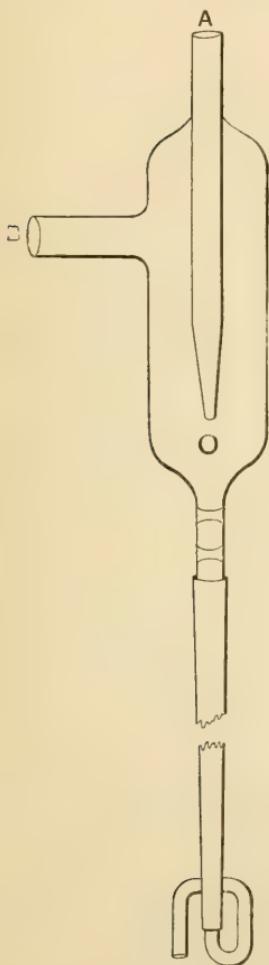
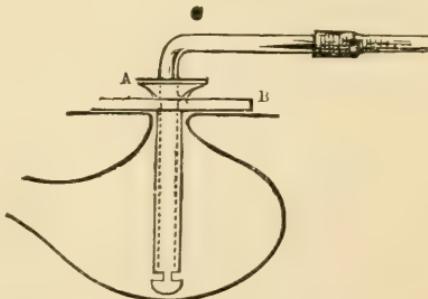


FIG. 5.



an efficient vacuum is maintained with the consumption of only one to two pints per hour. A gallon reservoir of water is therefore sufficient for from four to eight hours working, and since, by an arrangement to be subsequently described, it issues from the end of the fall-tube without being contaminated with urine, it may be collected in a vessel below and returned to the reservoir. It has been found that the

fall of the water in the two feet of tubing is quite sufficient to give adequate exhaustion for the purpose required, and the water-flow having been once adjusted, it is only necessary to return the water to the reservoir about every six hours in order to secure the automatic and continuous working of the pump night and day for any period.

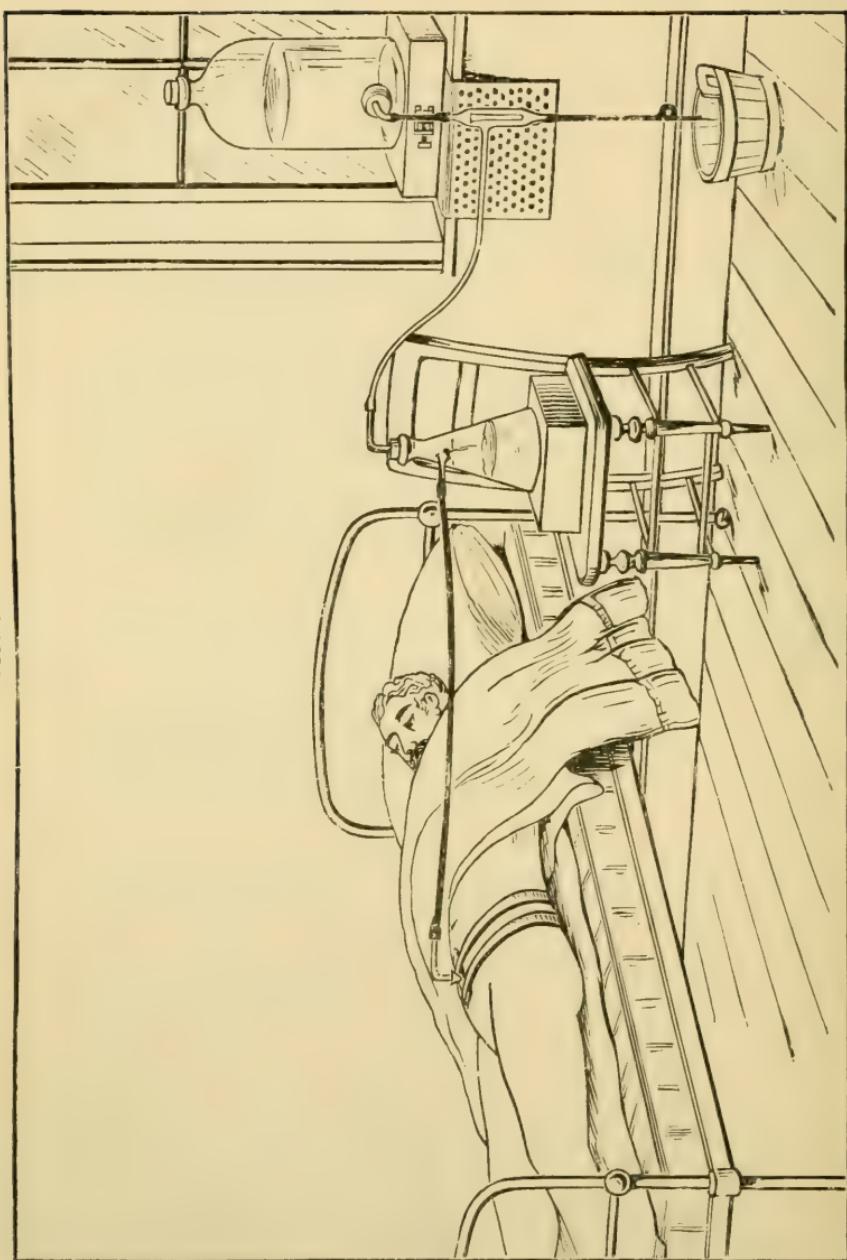
2. *The separate collection of the urine.*—This is effected by interposing between the pump and the patient (see Fig. 6) a receptacle having one orifice connected with the pump, by which it is rendered vacuous, and another with the bladder tube. I have employed a conical filter-flask for this purpose, the pump being connected with the mouth of the flask by means of a rubber cork, and tube passing just through the cork, while the side tube is attached to the bladder connections. The urine enters by the side tube and runs down the side of the flask. The flask should have a capacity of not less than one pint, so that it does not need emptying too frequently. If the urine be foul, a little formalin (one or two fluid drachms) may be placed in the flask without altering the physical appearance of the collected fluid to any appreciable extent. The interposition of this flask, by acting as an air-cushion, prevents the patient experiencing any pain or discomfort owing to sudden changes of pressure, when the apparatus is first connected or disconnected.

3. *The bladder connections.*—The withdrawal of fluid by means of a rubber tube introduced through the supra-pubic orifice is unsatisfactory, since it is difficult to so fix it that it shall not be withdrawn accidentally or by the patient's movements. Moreover, it is impossible to be sure that the end of the tube shall rest on the floor of the bladder, without which the removal of fluid is incomplete. The introduction of a glass tube is an improvement because, on account of its rigidity, the possibility of curvature of the tube in the bladder is removed. It is, however, difficult to fix and maintain in the right position without undue pressure on the wound or on the floor of the bladder, and it involves the risk of injury from accidental fracture of the glass tube. To obviate these objections the arrangement shown in Fig. 5 has

been devised. This is a diagrammatic outline sketch showing the tubes passing into the bladder cavity, the patient being in a recumbent position. The arrangement consists of an outer silver tube, A, with a funnel-shaped orifice, passing friction-tight through a stout sheet of rubber. This sheet of rubber rests upon the abdomen, and is held in position by bandages passing round the body of the patient. The silver tube should be four inches long for most cases, although a rather longer tube may be required if the abdominal wall be very thick. It should be pushed so far through the rubber plate that its bottom end remains suspended just above the floor of the bladder. This end of the silver tube is closed and rounded to avoid the possibility of injury to the bladder by sucking it into the tube. Just above the closed end two pieces are cut out and it is also perforated by a series of holes (not shown in the sketch) so that the urine may pass freely into it from the bladder with the least possible risk of being blocked by deposits, etc. Into this silver tube a glass tube, c, is dropped, reaching to the bottom, and bent about at right angles. The position of the glass within the silver tube is shown by the dotted lines. The silver tube having been fixed in position needs removing only about once in twenty-four hours for cleansing, while the glass tube may be removed as often as desired without disturbing the patient. If the urine be viscous, or loaded with deposits, the glass tube and the rubber tube leading to the flask require flushing out occasionally under the tap in order that the flow of urine may be unimpeded. The interposition of the silver tube, while securing the position of the glass tube, prevents any risk of injury from broken glass, and the funnel-shaped top obviates the risk of it slipping through the orifice into the interior of the bladder.

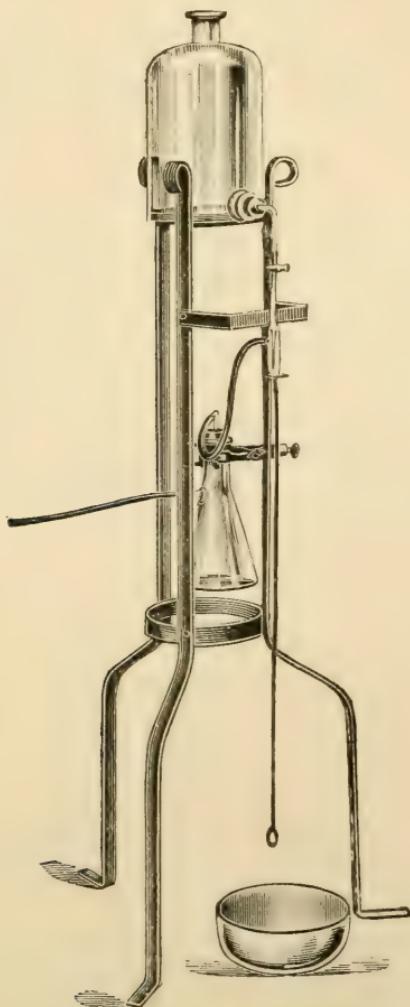
The arrangement of the separate parts will be easily understood by reference to Fig. 6, the flask for the reception of the urine being placed at the bedside so that the side tube is at about the same height as the right angle bend of the glass bladder tube. The rubber tube between the flask and patient should follow a *nearly horizontal line*. It may be so fixed by tying it loosely to a bed-cradle, care being taken to avoid sharp bends or too tight attachment to the

FIG. 6.



cradle, which may close its lumen and impede the free flow of fluid through it. Whatever the arrangement may be for holding the rubber tube in position, it should not be carried over any support which raises it much out of the horizontal position, otherwise the force of the pump may not be sufficient to raise the fluid over the bend. Fig. 6 shows how the arrangement may be placed at any bedside, but we have

FIG. 7.



found it more convenient to have the apparatus on a self-contained stand (Fig. 7), which does not take up so much space or

tax one's ingenuity in devising shelves and supports of the required height. This is shown in Fig. 7, where the conical flask is supported by a moveable clamp, whose height above the floor may be readily adjusted so that the side tube is in the same horizontal plane as the glass bend in the bladder tube. In fitting up the apparatus care must, of course, be taken to see that all the joints are air-tight, while a most important point is to adjust the screw pinch-cock so that the water falls through the pump *in distinct drops*, and *not in a continuous stream*. Each drop then occludes and carries down with it a bubble of air, this air being drawn from the flask which is in connection with the side tube of the pump. If the water flows from the end of tube A, Fig. 4, too fast, the fall tube becomes filled with a continuous column of water and no air is extracted, while if the flow be so fast that it cannot all escape through the narrow fall-tube the water rises through the pump and runs over into the flask.

No difficulty is experienced in maintaining the action of the apparatus day and night for any necessary period, so that by removing the urine as fast as it is secreted, overflow through the supra-pubic orifice cannot occur, and the patient's dressings and bedding are kept dry, while continuous removal of the urine prevents the contents of the bladder becoming decomposed by prolonged retention.

PRACTICAL ANÆSTHETICS.¹

By WALTER TYRRELL,

SENIOR ANÆSTHETIST TO ST. THOMAS'S HOSPITAL.

THE choice of an anæsthetic must depend upon the age and physical state of the patient and the requirements of the operation. Speaking generally of our practice at St. Thomas's Hospital, ether preceded by gas is the routine for patients between the ages of six and sixty years of age, and we not infrequently give ether to children of three years old or even earlier, and probably more than half the patients up to seventy-five years of age are given ether. A large proportion of old people, especially in hospital practice, are the subjects of chronic bronchial trouble. Old people, too, like infants, are specially liable to bronchial and laryngeal irritation, and unless the ether is very carefully administered this may occur to such an extent as to embarrass and fatigue a comparatively feeble heart and thus negative the stimulating and exhilarating effects, the very advantages for which the ether was chosen. Even in the most experienced hands it occasionally happens that the cough and irritation produced by ether are such as to necessitate at least a few inhalations of chloroform, after

¹ Mr. Tyrrell's paper was read before the Medical and Physical Society and reported at some length in the 'St. Thomas's Hospital Gazette,' to the Editor of which journal we are indebted for the use of the illustrative blocks. In view of the great practical value of Mr. Tyrrell's communication, the Editors of the Reports have been fortunate in securing his permission to reproduce it *in extenso* for the use of a wider circle of readers.

which ether can usually be reverted to without trouble. There are those, however, in whom ether produces such an amount of cough and dyspnoea, apparently by causing a sort of urticarial swelling of the upper air-passages as to make it an impossible anæsthetic.

CHOICE OF AN ANÆSTHETIC FROM THE POINT OF VIEW OF THE CONDITION OF THE PATIENT.

Undoubtedly the patients who do best with ether are the patients who require least to anæsthetise them. This may also be said of chloroform, but not to the same extent. Unfortunately, we do not know before we begin how much of the anæsthetic a patient is likely to require. We do know that the alcoholic generally requires a great deal, and is a difficult subject with ether alone; but there are degrees of alcoholism. The man who gets tipsy with a comparatively small amount of alcohol usually does well, if the transition from gas to ether is carefully and rapidly managed, but the chronic soaker is more difficult; still, I think, for him, too, the routine should be gas, followed by ether, and then, if necessary, some chloroform to complete the anaesthesia. I prefer to recommend this method as a routine, because the stage of excitement with chloroform in alcoholics is even more difficult to manage than that of ether, and is attended with more danger unless great patience in its administration is exercised, owing to the liability of the inhalation of a highly concentrated vapour immediately after the spasmodic holding of the breath, such as commonly occurs in chloroform excitement, and which is much more pronounced in these cases.

In selecting between ether and chloroform for any special case one has always to bear in mind that ether very much more than chloroform tends to diminish the calibre of the upper air-passages by its irritating effect on the mucous membrane. This is, no doubt, minimised by proceeding slowly with ether, and probably slightly diminished by the previous administration of nitrous oxide; with chloroform it is practically abolished by slow and dilute administration,

except in the case of very young children, and older children with very obstructive adenoids and tonsils, in whom a very little additional swelling makes it difficult to keep a sufficient air-way during anæsthesia.

This tendency of ether to swell up and diminish the calibre of the air-passages militates against its use in all cases in which there is dyspnœa, and especially in those cases caused by pulmonary or pleural disease, or from any morbid growth partially blocking or pressing upon the air-passages, or from laryngeal paralysis, either central or from pressure of a tumour upon the recurrent laryngeal nerve. Chloroform slowly given in a high dilution is usually well borne in these cases, and if necessary, a little ether may be given subsequently. When a patient is thoroughly anæsthetised with chloroform, much less ether is necessary to maintain the anæsthesia, and such small amount does not then appear to have any appreciable effect in obstructing the air-way. When the dyspnœa is caused by pressure below the diaphragm, such as a cyst, solid growth, or ascites, ether may be given, preceded by only a small quantity of nitrous oxide, and any sign of cyanosis prevented by a small stream of oxygen into the inhaler, or failing that, more air than usual must be allowed. The patient should have as many pillows as necessary to make him breathe comfortably to begin with, and these may be removed by degrees as the operation takes off the pressure from the diaphragm. In the dyspnœa of cardiac disease the same principles should be followed as when such is caused by obstruction to free respiration, as we have to choose between the strain put upon an already weak and diseased heart by the ether, with its necessarily small accompaniment of air, or the more depressing action of chloroform, with its free dilution of air.

Under any circumstances a patient suffering from dyspnœa due to heart disease must run a risk in taking an anæsthetic ; with chloroform the already weak heart is still further depressed, while with ether it is whipped up and made to go nineteen to the dozen, while the necessary amount of air instead of being increased accordingly is diminished at least by half, or even more.

CHOICE OF AN ANÆSTHETIC.—HEART DISEASE.

For many years I have preferred to begin such cases with chloroform very freely diluted, and then to add small quantities of ether vapour as may be found necessary. This is very easily accomplished by my double-bottle Junker's apparatus, which will be described later. I still prefer this plan for the majority of cases, as it is very important not to embarrass the breathing still further or to run the risk of ether irritation of the air-passages. Still, one sometimes has to face a case which must have some stimulant before commencing the chloroform, and one of the following methods may be resorted to :

1. Half to one ounce of brandy in a wine glass of hot water, given half an hour before operation. For many years before the introduction of cocaine this was the routine treatment for all cases in the eye department over sixty years of age, who were invariably given chloroform for iridectomy and extraction of cataract.¹
2. The injection of an ounce of brandy with an equal quantity of hot water into the rectum.
3. The subcutaneous injection of a syringeful of ether or brandy.
4. A method which at one time I frequently employed, but which has fallen into disuse owing to our more perfect management of the dosage of chloroform ; I refer to the evaporation of an ounce or two of ether through a tube into the rectum, which I think might advantageously be had recourse to more frequently than it is.
5. Commencing the administration very slowly with ether and a small stream of oxygen, and continuing or not with well-diluted chloroform, according to circumstances.
6. The subcutaneous injection of strychnia gr. $\frac{1}{20}$.

Dyspnœa on slight exertion is the main symptom which influences you not only in the choice of an anæsthetic, but also in your prognosis as to whether a patient is likely to

¹ Mr. Nettleship has kindly reminded me that for some six years before the rise of cocaine he did a good many extractions of cataract without any anæsthetic, about one in every three or four ; but the above refers to patients who were anæsthetised.

bear a prolonged operation or not. Signs of cardiac or pulmonary disease such as murmurs, condition of pulse, cyanosis, consolidation of lung, œdema of lungs or extremities, collections of fluid in serous cavities, also help you to a conclusion on these points.

The fact of there being a mitral murmur without the presence of dyspnœa or other signs of heart disease, need not deter you from giving ether, preferably preceded by nitrous oxide ; nor need it prevent your giving chloroform if the necessities of the operation demand it.

A good quality ventricle will produce a murmur with only a slightly faulty valve, whereas it is the poor quality ventricle with which the anæsthetist is concerned, as the latter will not so well bear the strain of a prolonged operation. In examining the heart I prefer after palpation to place the ear directly over the precordium, as giving one the best idea as to the quality and power of the ventricle.

AORTIC DISEASE.

A systolic aortic murmur need not influence you in your choice of an anæsthetic, provided the power of the ventricle is good ; but if, on the contrary, the impulse is feeble, the systole short, and the pulse small, it is best, where possible, at least to commence your administration with ether. In aortic regurgitation you would like to commence with ether N₂O, and provided there is no dyspnœa or signs of cardiac failure the efficient etherist may do so ; but great care must be taken to avoid straining or struggling, and in the case of the alcoholic, or where any doubt exists, I think it is better even for the efficient etherist to commence slowly with well-diluted chloroform, and proceed subsequently with ether if necessary, or in any case if the operation is a prolonged one.

BRONCHIAL CATARRH—LUNG CONSOLIDATION—ASTHMA.

In chronic cases of bronchial catarrh and of lung consolidation it is best to give chloroform at least to commence

with, although in some cases of asthma and dry catarrh patients do well with ether, the asthmatic condition being relieved by a copious discharge of mucus during the early part of the administration, *i. e.* before complete anæsthesia, after which the breathing is quiet, and etherisation can be continued without further trouble, so that the asthmatic, the subject of some dyspnoea with dry bronchial sounds, may be given ether, provided there is not much accompanying emphysema or dilatation of right heart. It is well to bear this in mind, because, especially in private practice, a considerable proportion of cases operated on for haemorrhoids are the subjects of asthma, and these cases requiring a profound anæsthesia for the dilatation of the sphincter are more safely anæsthetised with ether than with chloroform.

RENAL DISEASE.

Renal disease need not influence you in the choice of an anæsthetic, provided that there is no resulting cardiac failure. Albuminuria is often temporarily increased by either ether or chloroform after prolonged anæsthesia. It is rarely initiated by either drug, and probably more frequently by chloroform than by ether. Cases of suppression of urine during or following the administration of ether have been reported by Lawson Tait and others. I confess I am sceptical as to this being ever a cause of death independent of cardiac failure. We have had numerous opportunities of watching the flow of urine from the ureters at St. Thomas's Hospital, and have found that where the heart is healthy, especially in young people who come under operation for extroversion of bladder, the flow of urine is not diminished, much to the surgeon's discomfort.

CHOICE OF AN ANÆSTHETIC FROM POINT OF VIEW OF THE NECESSITIES OF THE OPERATION.

Apart from the age and condition of the patient, only the necessities of the operation influence us in the choice of an anæsthetic. Under this head the first thing to consider is the length of time for which anæsthesia is required. If

the operation is upon the mouth or upper air-passages we can only secure with nitrous oxide alone half a minute's anaesthesia ; but if the operation is upon any other part of the body, a full minute's anaesthesia may be secured. In the healthy subject these periods may be considerably increased, either by administering the gas again and again, or by giving it with some admixture of air or oxygen. Since the introduction of oxygen as a means of prolonging the administration of nitrous oxide, periods varying from a few minutes to half an hour or more of satisfactory anaesthesia have been obtained. One of my earliest cases in the hospital was put down in the list as abscess of the chest wall, and Mr. Makins thought it would take two or three minutes ; but it turned out to be a localised empyema with necrosis of the rib, and occupied nearly twenty minutes. The anaesthesia was most satisfactory, and the patient at its conclusion was able to sit up to have the dressings and bandages applied. He was a somewhat feeble anaemic youth under twenty years of age.

Since then experience has shown that this is the type of patient who does best under gas and oxygen, quite independently of the character of the operation. This is doubtless due to the fact that children and the more feeble anaemic adults require less gas to produce anaesthesia than others, while the alcoholic and the full-blooded muscular male is the opposite type, requiring a much larger amount of gas to obtain anaesthesia, and if sufficient oxygen is added to prevent jactitation and marked cyanosis the patient often becomes excited and impossible to manage. In the typical case you get an anaesthesia in which there is not the least cyanosis or the faintest jactitation, and between these types there is, of course, every degree of suitability or otherwise for this form of anaesthesia.

Nothing but experience will make you an adept at selecting your cases. Given a favourable subject, no anaesthetic is so pleasant to take or so free from unpleasant after-effects for operations occupying a few minutes only ; the one drawback to it being that its anaesthetic effects cease suddenly almost directly the administration is over, and the patient comes round to whatever pain there may

be left from the preceding surgical procedure. For instance, after passive movement for the breaking down of adhesions in joints or sheaths of tendons, especially if much force has been used, the patient comes round to almost unbearable pain, whereas when ether or chloroform has been administered in such cases the patient comes round to comparatively little pain, as the anæsthetic effect of the latter drugs continues for some time after the administration has ceased and then passes off gradually while the severe pain immediately following the surgical manipulation is subsiding.

We have all of us experienced the very severe pain which quickly follows a bad sprain of a joint, a "sickening pain" accompanied by a more or less profuse perspiration, and not infrequently by positive nausea. This is only a minor degree of the actual syncope which sometimes follows sudden severe pain, and we must be alive to the possibility of its occurrence to patients coming round from gas or gas and oxygen, and choose our cases accordingly. Such syncope or threatened syncope usually occurs within three or four minutes of ceasing the administration of nitrous oxide, and should be dealt with according to ordinary principles. I have come across one case in which an alarming syncope occurred half an hour after the surgeon left the house. I had administered nitrous oxide and oxygen for the second time for passive movement of the shoulder-joint. The patient was a highly cultured lady of early middle age with neurotic tendencies. She appeared to bear the anæsthetic well, and was left with a nurse a quarter of an hour afterwards in a satisfactory condition. Half an hour later an alarming syncope occurred, which made the nurse, a well-trained thoroughly reliable woman, think her patient was dying. I am afraid this syncope was brought about by continued pain in a neurotic subject whose heart had recently gone through the strain of ten minutes' administration of gas and oxygen.

For short operations, where the after-pain is slight, and the patient neither an alcoholic nor a strong muscular man, but one whose heart can bear a slight strain, gas and oxygen is most useful. For long operations, provided the age and

general condition of the patient permit it, ether preceded by gas is our routine at St. Thomas's for all cases not involving interference with the mouth and upper air-passages. For the latter chloroform is a necessity, as it is not possible to keep up an ether narcosis during an operation upon the mouth lasting more than a few minutes. But even in these cases you may, as my late colleague, Mr. White, invariably did, begin with ether, and after the patient is well under continue with chloroform by means of a Junker's apparatus and a metal tube. In cases of feeble heart this is the best method, but I do not think it is the best routine in all mouth operations. I always employ it in dental surgery where a prolonged anæsthesia is necessary, because the patient is in the upright position in a chair, which is unsuitable for chloroform alone. From the anæsthetist's point of view the patient cannot be too upright for these operations. In the completely upright position with the mouth propped open, the mucus and excessive salivary flow, due to the irritation of ether, all dribble out of the mouth, and through a celluloid face-piece may be seen to accumulate, and should be allowed to escape, from time to time, on to a towel placed across the chest with a waterproof bib underneath it. The administration of the ether is continued for a minute or two after the loss of the conjunctival reflex, and immediately the face-piece is removed the operation is commenced, and the narcosis is kept up by means of chloroform or chloroform and ether administered through a tube by means of a Junker's apparatus. It is not difficult to keep up an anæsthesia lasting five minutes by this method. If the head is kept in the right position by an assistant, the blood flows out of the mouth, and no more swabbing is necessary than is required to allow the dentist to see what he is doing, and such is very little if the more difficult lower back teeth, which are most liable to be obscured by the blood, are removed first. The only objection to the position is that for the removal of upper teeth it is rather back-aching work for the dentist, especially if he is a tall man. I have seen, however, the mouth completely cleared of teeth and stumps, involving forty-nine separate extractions, in this

position, without the faintest sign of blood passing back to the laryngeal aperture. The patient should be bent well forwards at the conclusion of the operation. For other mouth operations in which the recumbent position is used, I prefer to commence with chloroform if the general condition of the patient permit of it, and for the reason that one's chief anxiety in these cases is to keep up a free air-way into the chest, and yet to prevent the ingress thereto of blood, mucus, or septic matter from the mouth. Now ether tends to obstruct the air-way by the turgid condition

FIG. 8.



FIG. 9.



Fig. 8.—Correct position for prolonged dental operation.

Fig. 9.—Faulty position, favouring the entrance of blood and foreign bodies into the larynx, and impossible for the smooth administration of ether.

of the mucous lining it produces, diminishing the calibre of the air-passages, and by the great increase of saliva and mucus. If you abolish the cough reflex, this mucus, tainted, say, from a cancerous ulcer of tongue, is very liable to be sucked into the air-passages and so originate septic pneumonia; and if you do *not* abolish the cough reflex, the ether irritation of the air-passages and the consequent excessive amount of mucus gives rise to such continuous cough and retching as to be most embarrassing to the operator.

Whereas if you give chloroform from the commencement in these cases, you keep a freer air-way, you get no cough from mucus due to the irritation of the anæsthetic, so that you are able to maintain the cough reflex throughout the operation, and this is the great safeguard against blood or septic matter finding its way into the lungs. Fortunately the cough reflex is one of the last to disappear in chloroform narcosis. If you administer chloroform very slowly you may allow a mouth operation to be commenced, in the case of children, directly the corneal reflex has disappeared, and you will be sure of having a brisk cough reflex. In the case of adults a little deeper anæsthesia is necessary, as the muscles of the jaw are usually not relaxed for a minute or two after the corneal reflex has disappeared. With a little practice this degree of anæsthesia may be easily maintained and not exceeded by means of a Junker's apparatus and a metal tube, and if a double-bottle Junker is used a little ether may be added at any moment should occasion arise. As I have said before, ether does not appear to have such an irritating effect upon the air-passages when the patient is already anæsthetised with chloroform, and much less of it is then required to maintain anæsthesia.

For the removal of tonsils and adenoids I always give chloroform in private practice, unless there is a distinct contra-indication to its use, always employing a Junker from first to last, and commencing the operation immediately the corneal reflex has gone. There are only two objections to this method, which, however, do not apply to private practice. The first is, that it takes three or four minutes longer to anæsthetise the patient, and the second is, that it is advisable that the recumbent position should be maintained for a varying time afterwards. For these sufficient reasons gas and ether has of late been substituted for chloroform for adenoid and tonsil operations in the outpatients' department. This operation is of so short a duration, and the position employed one in which it is so easy to keep blood from entering the trachea, that there is not the same necessity for chloroform as in many other operations in the mouth, for which the position must be such as will permit the surgeon to see what he is doing. For

instance, in the case of excision of the tongue, the surgeon must have a position which will allow the light to fall on the part operated on. It cannot be always with the head hanging over the end of the table ; in fact, more frequently the recumbent position with two or three pillows to raise the head is the one chosen. This position, more than any other, favours the trickling of blood into the air-passages, and, when it is used, care should be taken that the cough reflex is brisk throughout the operation. Since the invention of Junker's inhaler we have been able to secure this degree of anæsthesia for mouth operations, with the result that septic pneumonia, which was common twenty years ago, now very rarely occurs.

Papillomatous growths of the larynx in the adult are usually removed by the aid of cocaine alone ; but in children the necessary quietus cannot be thus obtained, and chloroform has to be administered in the absolutely upright position, as laryngologists have not yet learned to manipulate in the larynx upside down. In such cases it is obvious that the cough reflex should be maintained, although the laryngeal reflex is abolished by the local use of cocaine. The same applies to foreign bodies in the larynx.

A few of us here may remember a tracheotomy by Sir William MacCormac for the removal of a blade and joint of a tooth forceps from the bifurcation of the trachea. After several ineffectual attempts to remove the foreign body by various long forceps, it was evident that the manipulations had caused considerable bleeding. With the aid of three dressers standing on the operating table the patient was held up by the feet, and not only was the blood readily coughed out in this position, but the obstructing body fell into the blades of the forceps, and was easily removed.

One is sometimes called upon to administer an anæsthetic to children from a few months upwards for laryngoscopic examination and the removal of papillomatous growths from the larynx through the mouth, and chloroform is necessarily used, although the laryngologist insists upon the upright position. The patient is generally held on the nurse's lap, with one hand over the forehead to steady the head, and prevent it falling forward. When phonation is

abolished, as it necessarily must be, these papillomata have an inconvenient way of slipping aside out of the grasp of the forceps. I remember one case in which, after half an hour's ineffectual attempts at removal, the completion of the operation was postponed. This patient coughed up the growth *en masse* a few days afterwards, and so relieved me of further anxiety. Besides the operations within the air-passages, it is often necessary to give chloroform rather than ether for operations for the removal of tumours pressing upon and obstructing the trachea from without. Speaking generally, I should select chloroform at least to commence with, for all cases in which there were definite signs of pressure on the trachea, such as dyspnœa, stridor, or croupy cough or voice. You may have a very large goitre without any pressure symptoms, and a very small one bound down to the opposite side by the tough capsule of the isthmus, in which the pressure symptoms are extreme, making the air-way little more than a chink ; and in the latter ether might produce a state of asphyxia demanding tracheotomy for its relief. Many surgeons prefer chloroform for all goitre cases if they have an expert to administer it, because the respiration is freer and quieter, the veins are not so distended, there is less hæmorrhage, and much less liability to air being sucked into a wounded vein.

Should ether be chosen for this operation, and obstructed respiration, cough, or retching occur, as is sometimes unavoidable, it is best to ask the surgeon to plug the wound for two or three minutes until you get a smooth anaesthesia, and so not run the risk of entrance of air into a vein. The entrance of air into a vein almost always occurs during obstructed respiration. In the event of such an accident the surgeon would maintain pressure on the wounded vein, and make no attempt to search for and ligature it until the anæsthetist had obtained a free air-way and quite unobstructed respiration. To do this, if ether had been the anæsthetic used, it would be advisable to turn the head well to one side to clear the mouth from mucus, to open the mouth, and to keep the tongue forward by pressing forward the angles of the jaw, or, if necessary, by tongue forceps ; and if the patient is not well under to

proceed with chloroform. I like to give at the same time a hypoderme of strychnine, gr. $\frac{1}{20}$, in case any heart failure should subsequently occur.

For thyroid operations the surgeon always requires the face in the mid-line with the head extended, and this is a most unfavourable position for the administration of ether, as it is impossible with it to drain the upper air-passages of the excessive flow of mucus and saliva. A profound degree of anæsthesia is necessary to prevent coughing, swallowing, retching, and vomiting, and this deep anæsthesia favours the entrance of quantities of mucus into the trachea, where it gets worked up into a tenacious froth, obstructing respiration, sometimes to such an extent as to make it necessary to let the patient come round sufficiently to cough or vomit it up.

In all cases where the surgeon requires the face in mid-line, and ether is administered, the anæsthetic should be commenced with one shoulder raised and the head well turned to the opposite side, so as to drain the mouth of all mucus and saliva during the early part of the administration. Such, for instance, is the best method for eye operations, the face not being placed in the mid-line until the patient is deeply narcotised, and the surgeon is ready to commence the operation. Operations for cataract are almost always performed under the local effect of cocaine, except for children and the very aged, when chloroform is usually preferred. The last occasion on which I gave an anæsthetic for the extraction of cataract from an adult in the eye department, the age of the patient was ninety-seven, and chloroform given very slowly answered admirably. A general anæsthetic is frequently given for iridectomy for glaucoma, because the operation has to be very carefully performed, and the subjects of glaucoma are often of a very nervous temperament. If there is no definite contraindication to its use I much prefer chloroform, as the ether produces great turgidity of the vessels of the eye, and therefore a liability to greater hæmorrhage, and the position with the face in the mid-line entails a liability to swallowing, coughing, or retching, unless the patient is profoundly anæsthetised, and in the latter state the mucus

often gives rise to sufficient obstruction to respiration to produce a certain amount of vibration of the head. With chloroform one can depend upon absolute stillness, but this drug requires, as always, to be given very slowly and carefully, especially as the subjects of glaucoma are never robust.

I find that nitrous oxide gas and oxygen answers very well for operations for strabismus and for meibomian cysts.

BRAIN SURGERY.

For operations on the brain surgeons invariably prefer chloroform, on account of the diminished blood-pressure caused by this drug producing much less liability to haemorrhage. I remember a case in which I had occasion to turn on a very little ether towards the end of a long operation, by means of my double Junker's apparatus. There was a large surface of brain exposed, and within a minute of my adding this small amount of ether to the chloroform, Mr. Ballance, noticing a marked difference in the state of the vessels, asked if I was not using ether. Here was positive evidence of the action of ether when the blood-pressure was falling very low with chloroform, and a complete answer to my critics, who think that I cannot administer a sufficient quantity of ether through a Junker's bottle to be of practical use.

Brain operations are the only cases in which a hypodermic injection of morphia is advantageously given beforehand, and this for the reason that it contracts the vessels, and like chloroform diminishes the liability to haemorrhage. One sixth of a grain is found to be sufficient for the purpose, while larger doses, in addition to chloroform, may depress the respiratory centre to an alarming extent. With this small amount it is astonishing how little chloroform is necessary to keep up anaesthesia during exploration of the brain, when once the necessary portion of bone has been removed.

I will not weary you here with a detailed description of the various mechanical contrivances employed in the administration of anæsthetics. These are fully described in the

various text-books on the subject. The apparatus we employ in the Hospital you not only have an opportunity of seeing in use, but of actually using yourselves under the supervision of the appointed anæsthetists.

For the administration of nitrous oxide you require a closely fitting face-piece, with an air-cushion all round it to make it nearly air-tight; a large india-rubber bag communicating with the gas-supply placed close to the face-piece; and between them a two-way stopcock containing an inspiratory valve, through which the gas is inhaled, and an expiratory valve, through which the expiration escapes into the room. The gas is inhaled until the breathing becomes stertorous and slight jactitation, such as twitching of fingers, occurs, and the patient is ready for the extraction of a tooth or a similarly short operation, the average anæsthesia secured being half a minute. If the operation is not upon the mouth the time may be extended by re-applying the face-piece after a couple of respirations of air. In dental cases beware of re-applying the face-piece if bleeding is going on in the mouth, as a clot may be sucked into the larynx, producing spasm of glottis of an alarming character, possibly requiring laryngotomy.

In administering gas to men with large moustachios it is impossible to prevent a slight leakage of air into the face-piece, but with the exception of alcoholics and very muscular men, who are liable to become excited unless anæsthetised quickly, I do not object to a very slight leakage of air with the gas. With this slight leakage of air it takes a little more gas, and therefore a rather longer time to produce the required anæsthesia; but this is an advantage rather than otherwise, for, speaking generally, it is found that the longer nitrous oxide takes to produce anæsthesia, the more sustained will be the narcosis. For the same reason, if the valves of your face-piece are in good order, it is undesirable to make your patient breathe deeply and quickly, because in so doing the patient passes rapidly under the influence of the gas, and the narcosis is comparatively short.

During the last two or three years various contrivances have been introduced with the view of prolonging the anæsthesia of nitrous oxide for dental operations. That of

Mr. Alfred Coleman seems to answer best. It consists of administering the gas through the nose by means of a cap covering and closely fitting that organ, and connected with the gas-supply by a tube passing over the top of the head, while the open mouth, as well as the nose-piece, is covered by an *ordinary* face-piece having an expiratory valve. When the patient is anæsthetised the ordinary face-piece is removed, and while the dentist commences his operation, the anæsthetist, holding the nose-piece securely in position, continues the administration through the nostrils under pressure from an india-rubber bag suspended at the back of the chair. It is easy to obtain two or three minutes' anæsthesia in this way, and much longer periods have been recorded.

FIG. 10.

FIG. 11.



Fig. 10.—Administering N₂O through the nose.

Fig. 11.—Continuing administration of N₂O through the nose during dental operation.

Others, after administering the gas to begin with in the ordinary way, keep up the supply during the operation, under pressure through a tube passed through the nose into the naso-pharynx, or by placing a metal tube in the mouth. Without some such contrivance we cannot be sure with

nitrous oxide alone, of a longer complete anæsthesia than half a minute, *i.e.* in the case of a mouth operation. Nitrous oxide answers well for such short operations as opening an abscess, or slitting up a sinus, but the great drawback to gas alone for any delicate operation, such, for instance, as strabismus or the curetting of Meibomian cysts, is that the jactitation of the limbs prevents absolute stillness of the body. It is on account of this inability to keep up a purely nitrous oxide anæsthesia for any length of time without such signs of asphyxia as stertor, cyanosis, and jactitation, that a mixture of this gas with oxygen was suggested. We are much indebted to Dr. Frederic Hewitt for much careful work on this subject. Dr. Hewitt tried various percentages of oxygen from 5 to $12\frac{1}{2}$ per cent., and while he found that 10 per cent. was preferable to $12\frac{1}{2}$, he came to the conclusion that there was no definite percentage of oxygen which in every case would prevent all traces of asphyxia and yet would in no way interfere with anæsthesia. Various types of patient required varying amounts of oxygen to produce the desired effect. Small children require more oxygen than adults, and women than men, the feeble and anæmic more than the robust, while to the alcoholic and the full-blooded muscular male it is difficult and often impossible to add sufficient oxygen to prevent signs of asphyxia, and at the same time keep up an efficient anæsthesia. This necessity for varying the amount of oxygen for different cases led to the invention of Hewitt's regulating apparatus for the administration of gas and oxygen. This is a very cleverly contrived apparatus with twin bags for the two gases, a mixing chamber, and a face-piece with inspiratory and expiratory valves. The oxygen is admitted into the mixing chamber by means of minute holes in a revolving drum, so that either one or two or the whole ten holes may be opened at will for the admission of oxygen. This regulating stopcock has thoroughly justified its existence, for it is often necessary to diminish the amount of oxygen during an administration as well as to increase it. Speaking generally, the longer the administration the more oxygen is required, and the later models of Dr. Hewitt's invention have been provided with means of adding oxygen up to an

equivalent of thirty holes instead of ten. If too little oxygen is given, you get all the drawbacks of a nitrous oxide narcosis resulting. If too much oxygen is given, you get mental and muscular excitement, laughter, struggling, and shouting. Just so much oxygen as will prevent asphyxia, and no more, is what you aim at ; and as this amount varies in different individuals no rule can be laid down, but practice soon teaches you how to manage it. I would recommend those interested to read Dr. Frederic Hewitt's little book on the subject.

Accidents with nitrous oxide gas are happily very rare. Probably the commonest one is a tooth or a stump, having escaped from the dental forceps, finding its way or being sucked into the larynx.

Such an accident may cause asphyxia, due to laryngeal spasm from the presence of the foreign body in the larynx or upon the glottis. In that case the patient should be bent forward, and the glottis explored by the finger, when, if the foreign body has not actually entered the larynx, it may usually be displaced forwards over the tongue, or, failing that, backwards into the pharynx. The tongue, during this manœuvre, should not be pulled forward, as it drags the epiglottis with it, which not only opens the glottis, but aids inspiratory efforts to draw the foreign body into the air-passages. If nothing can be felt to dislodge in this way, and signs of asphyxia still continue, recourse must be had to inversion, while the patient is directed to *inspire* very slowly, and to *expire* or cough with effort. Shaking the patient or slapping him between the shoulders, and, if it is at hand, giving him a little oxygen through a tube, are useful adjuncts ; but if all these measures fail, recourse must be had to tracheotomy.

Laryngotomy might suffice if the patient, by pointing to the larynx, feels that the foreign body has not passed into the trachea. When a foreign body passes into the right bronchus the asphyxial signs greatly subside, and one might be disposed to postpone energetic measures for its removal ; but inversion, to be of use, should be practised at once, before the body becomes embedded by inflammatory swelling around it. I have seen inversion practised upon

cases brought into hospital several days after the accident, but never with success, whereas immediate inversion has proved successful in dislodging a tooth in the trachea. A carious tooth lodged in a bronchial tube leads to septic pneumonia. I know of attempts made to remove teeth from the lungs both in this Hospital and at Brompton; but these were before the days of X rays, and, so far as I know, none have succeeded.

To prevent such accidents, every tooth removed should be seen to come out of the mouth. If one escapes from the forceps the mouth should be explored by the finger, with the patient bent forwards. Conical teeth, such as canines and bicuspids, are apt to be shot out of the forceps with considerable force, and in the head-extended position may be shot to the back of the mouth, but in the upright position they are invariably shot out of the mouth, or if into it, only reach the anterior part, where they can be easily seen and removed. This is another reason for using the upright position in dental operations. (See Figs. 8 and 9.)

Several fatalities have been recorded under nitrous oxide which have not been satisfactorily accounted for. To obtain the longest possible anæsthesia I think it is sometimes pushed too far, and the asphyxial element not sufficiently regarded. Sometimes the asphyxia is continued after the inhalation is discontinued, by the operator while seizing a lower molar pressing the tongue backwards, and completely obstructing respiration. The tongue, somewhat engorged during the inhalation, usually overlaps the lower molars, so that its displacement is a necessity; but the anæsthetist should see that respiration is not dangerously interfered with, and direct that the operator's fingers should release the tongue directly the forceps have been adjusted, and not remain pressing on the tongue until the extraction has been accomplished. Again, in the quite upright position, which is really as convenient for lower teeth, a little pressure on the tongue into the floor of the mouth is much less likely to obstruct respiration. A fatality has recently occurred at a London hospital during the administration of nitrous oxide, which was given to

make incisions for the relief of inflammatory swelling of the tonsils and surrounding parts. It seems probable that respiration was already much obstructed by the inflammatory swelling, and the engorgement caused by the gas was the last straw. Tracheotomy was performed, but I presume not quickly enough, as respiration could not be restored. I need hardly say that such a case is most unsuitable for nitrous oxide, or, indeed, for any general anaesthetic; but if one was deemed necessary, preparations should be made beforehand to do tracheotomy should occasion arise.

We never have any accidents in administering gas as a prelude to ether, because we always stop short of asphyxial symptoms, and although the amount of gas required varies in different individuals, it is only the practised hand who knows exactly when to stop the gas and proceed to the ether. For this reason we have a detachable india-rubber bag for the gas which holds the average amount required. This holds a little too much for children, and for them it should not be quite filled, while for alcoholics and powerful muscular males it barely holds enough for the perfectly smooth transition to ether, and I think we shall have to provide three bags: one for children, one for the average case, and the largest one for alcoholics. With the bag detached from the gas supply you cannot administer more than its contents, and are sure of stopping short of stertor and jactitation, which, if occurring, prevent the smooth transition to ether, by the necessity of having to admit some air until the jactitation has subsided; and then excitement and struggling are apt to ensue before sufficient ether can be administered, and thus one of the chief reasons for preceding ether by gas is more or less sacrificed.

By administering nitrous oxide gas alone up to a certain point, then letting the gas pass over a little ether, and, finally, by degrees giving ether alone, a patient may usually be anæsthetised without a struggle, and without exciting spasm or cough. Preceding ether with gas is one of the greatest modern improvements in anæsthetics. From the patient's point of view it robs the administration

of all its horrors. From the anaesthetist's point of view it relieves him of much trouble, for it minimises struggling, coughing, choking, retching, etc., in the early part of the administration. And from the operator's point of view it saves much time, for the ether can be pressed on with much greater rapidity after gas, and the patient is in a much better condition for a severe operation if he has been anaesthetised smoothly, rather than having gone through a stage of struggling, coughing, and laryngeal spasm. The practised hand may give ether alone in a majority of cases without such troublesome symptoms, but there is a minority who are so intolerant of the vapour of ether, or have so little self-control, as to make it impossible even for the expert to anaesthetise them without a struggle.

ETHER INHALATIONS.

There are numerous patterns of ether inhalers, but the ones which permit of giving gas first, then gradually adding ether to the gas until, finally, the gas is omitted and anaesthesia kept up by ether alone, are the ones mostly in use, and Clover's Gas and Ether Inhaler, and his portable inhaler, with modern improvements of them, are types of this class of instrument. It is Clover's portable inhaler which we use in the Hospital, and this pattern has, to my mind, only one objection, and that is that the ether container is placed close to the patient's face, so that any sudden movement of the head shakes up the ether, and if the anaesthetist is not on the alert, and neither turns back the indicator nor removes for a moment the face-piece, an almost irrespirable or choking amount of ether vapour is given off. But to combat this only requires a little management, and the inhaler in other respects is so admirable in its simplicity, and so easy of sterilisation, that it takes a front rank amongst the numerous inhalers in the market. I prefer a celluloid face-piece with a removable rubber air-cushion round it, firstly, because it is light, and secondly, because it is sufficiently transparent for you to see that mucus has a free exit, and that the lips are not obstructing the air-way. Although it cannot be boiled, it is easily cleaned and rendered aseptic.

POSTURE FOR ETHER INHALATION.

One of the most important points in the administration of ether is the posture of the patient. In a paper read before the Royal Medical and Chirurgical Society of London by Dr. Frederic Hewitt and Mr. Marmaduke Sheild, the authors discussed this subject exhaustively. They stated introductory that the importance of it to the surgeon was greater than at first sight appears, for in deciding upon this or that posture for a surgical operation something more than mere operative convenience ought to be taken into account. It would, of course, be irrational to expect a surgeon to operate upon a patient placed in such a position that the operation would in consequence become a matter of serious difficulty. But if the adoption of a particular posture would prejudicially affect the patient, and if some other posture, although not quite so convenient to the surgeon, would be unattended by such objections, there can be no doubt that the surgeon should, in the interests of his patient, accept the compromise and place the patient in the safer, though, perhaps, less convenient position. This happened quite recently in our own operating theatre, when the late Mr. Anderson acceded to my request to dispense with the lithotomy position for a haemorrhoid operation on a man who was suffering from an extreme degree of aortic regurgitation, and to operate in the dorso-lateral position with the buttocks brought down to the end of the table and the legs held up by hand so as in no way to interfere with respiration. In this position, after a very little gas, the patient took ether with a small pinhole stream of oxygen without a single cough or the slightest respiratory embarrassment, and made a good recovery. The authors referred to further state that the subject of posture appeals to the surgeon through other channels; for the position chosen may very materially influence the condition of the parts upon which the operation is being performed. This may come about by one of three ways: (1) the posture may be such that by favouring the occurrence of jerky and exaggerated breathing, coughing, retching, or vomiting, it greatly interferes with that quietude

which is so essential to the surgeon ; (2) it may by impeding or interfering with respiration lead to congestion, venous oozing, and inconvenient haemorrhage ; or (3) it may in response to the influence of gravity advantageously or disadvantageously modify the blood-supply to the site of operation. To the anæsthetist the subject is of equal if not of greater importance. With him rests the responsibility of maintaining or endeavouring to maintain a perfectly free air-way and unimpeded respiratory action from the commencement of his administration until the patient has acquired sufficient consciousness to be left unwatched. If the posture be one in which the trunk weight tells unfavourably upon free lung expansion, or one in which blood, vomited matter, pus, or other adventitious substances tend to gravitate into the laryngeal aperture, serious difficulties and accidents will be liable to arise. In addition to these considerations, recent physiological and clinical observations have shown that in the more or less vertical posture of the body, and especially under certain anæsthetics and in certain degrees of anæsthesia, the effects of gravity upon the circulation may be such as to cause threatening or fatal symptoms. Lastly, the posture immediately before and after an anæsthetic is given is to the patient himself a matter of importance, not only because some postures are extremely uncomfortable when inhaling anæsthetics, and are really quite unnecessary, but because recovery from the effects of these agents takes place more readily and quickly in some postures than in others.

Unpleasant after-effects, also, may be to a great extent avoided if the posture during administration has been one in which mucus and saliva have drained away from the fauces, and have, therefore, neither entered the stomach, to be subsequently ejected, nor found their way into the larynx, and so into the bronchial tubes, to set up bronchitis or even broncho-pneumonia.

It is a common occurrence on going into the ante-room to give an anæsthetic to find a big fat woman sitting bolt upright on the operating table, and necessarily using considerable muscular force to maintain herself in that position, which had much better have been conserved for the strain

she was about to undergo. She tells you that she cannot breathe lying so low down, and implores you for another pillow or two more pillows. She should have just as many pillows as will make her breathing comfortable. If a patient cannot breathe comfortably in a certain posture without an anæsthetic, how can one expect her to stand the strain of a long operation in that posture impossible to her for ordinary sleep? At best this type of patient bears the strain of an operation badly. They generally have feeble and often dilated hearts, as well as some amount of bronchial catarrh, and if the weight of the fat abdominal walls and the omentum be allowed to press upon the diaphragm respiration is very seriously interfered with. The position in which a patient is usually presented to the anæsthetist is lying upon his back upon a flat table with one shallow pillow. This places the head and neck in a position of extension upon the trunk. Now in ordinary sleep this position favours stertorous or more or less obstructed breathing; much more, then, would it do so during anæsthesia. This obstruction, at first a little more than ordinary snoring, becomes increased as anæsthesia proceeds, until the extraordinary muscles of respiration attached to the lower jaw are brought into use, and their action, while increasing the respiratory effort, increases the obstruction by pulling the jaw backwards and allowing the tongue to fall back and diminish the laryngeal aperture. This position, then, of extension of the head hampers the anæsthetist in his first duty, viz. that of keeping up a free air-way. The objection to it applies to any anæsthetic, but with ether there is an additional objection, as with the latter drug there is always a greatly increased flow of mucus and saliva, as well as a considerable turgescence and swelling of the mucous membrane lining the upper air-passages, and this not only diminishes the already obstructed air-way, but in the early stages of the anæsthesia interferes with respiration, at first by efforts at swallowing, which in this position is very difficult or impossible, and then by the collection of mucus and saliva in the pharynx causing retching, coughing, laryngeal spasm, general movement, cyanosis, venous turgescence, and the increased production of

large quantities of mucus leading to a more or less asphyxial state. Also when the patient is more profoundly under the influence of ether, this faulty posture favours the sucking into the larynx, and so on to the bronchial tubes, of fluids loaded

FIG. 12.



Faulty position for the commencement of any anæsthetic.—Impossible position for the smooth commencement of ether.

FIG. 13.



Correct position, especially for the commencement of the administration of ether.

with germs, which, though quite at home and harmless in the mouth, set up bronchitis and broncho-pneumonia when introduced into the lungs. If the nature of the operation

be such that the head must be thrown back, as is the case in some operations on the neck, the patient should be first anaesthetised in the more comfortable position to be described, and when the mouth has been drained of the first great flow of mucus, the patient is placed deeply under, when the position required by the surgeon can be adopted, though not without some risk of mucus getting down into the lungs. It is to obviate such risks, as I have said when discussing the question of the choice of an anaesthetic, that I prefer chloroform for certain neck operations, notably those for the removal of a portion of the thyroid gland or isthmus. Flexion of the head and neck is not more desirable than extension, for, as pointed out by Dr. Bowles in his paper on "Stertor, Apoplexy, and the Management of the Apoplectic State," it has the effect of lessening the calibre of the air-way, so that a patient lying on his back with several pillows under his head, but not raising the shoulders, is liable, when anaesthetised, to show signs tending to asphyxia. Now the remedy for this very unsatisfactory state of things, described as occurring with the head extended or flexed, is to have just so much pillow under the head as will bring it in a straight line with that of the body. In addition to this, instead of having the face in the mid-line, favouring by gravitation the trickling of mucus and saliva *en route* to the stomach or windpipe, turn the face well on one side or the other so that such fluids may make their escape at the corner of the mouth. If the operation permit—and there are very few that do not—this drainage of the mouth is also much facilitated by placing a pillow under the shoulder opposite to that to which the head is turned. This affords a little further rotation of the head upon the trunk, and with the corner of a towel placed in the dependent cheek, allows of very free drainage of the mouth. It is found that rotation of the head, unlike extension or flexion, has no effect in diminishing the calibre of the air-way.

The accidents and emergencies occurring in the early part of an administration of ether are exactly those described as commonly occurring in the head-extended position with the face in the mid-line. In cases of strangulated hernia and

other kinds of intestinal obstruction, the most experienced anæsthetist cannot always avoid vomiting during the earlier stages of narcosis, and many fatalities have been recorded, by the lungs becoming waterlogged through the vomiting or sometimes silent regurgitation of fluids from the stomach. In the light of modern days I attribute most of such fatalities to a faulty posture of the patient. At one time, when these accidents were not uncommon, the question of washing out the stomach before operation was discussed and advocated. It was found that the act of passing a stomach-tube and washing out, especially in acute abdominal cases, not infrequently produced a degree of syncope which quite unfitted the patient for a prolonged operation, and I think there was one case recorded in which the patient died without any operation being performed. I wrote to one of our surgical staff and asked him for his views on the subject, and he replied to me as follows :—" Some years ago, owing to an occasional death under an anæsthetic from inhaling the contents of the stomach, especially in operations such as strangulated hernia, where no preparation of the patient was possible, it was proposed to wash out the stomach as a preliminary to the administration of an anæsthetic in cases of strangulated hernia and abdominal obstruction. Well, in practice I found that the shock was so much increased in these acute cases that it became a very risky performance. It would be better, in my opinion, to get the patient to swallow a pint or two of warm water or mustard and water—natural lavage. As regards the other cases, which are not so acute, the surgeon should, in my opinion, have tried the effect of lavage before the patient comes up for operation ; if the patient is made very faint by this treatment, it should not be practised just before a long and exhaustive operation ; on the other hand, there is no objection to it if the patient is known to tolerate lavage without inconvenience. If there has been no opportunity of trying lavage some days (or one day) before operation, it should not be done for the first time just before or during the anæsthesia. This is not only my opinion, but the opinion also of many German and American surgeons who do so much stomach surgery." Such are the views of one of our staff, who has kindly

communicated them to me in writing, and I am glad to be able to quote them, as I have had no experience whatever of washing out the stomach before an anæsthetic is given. I have, however, frequently washed out the stomach at the end of an operation, when the patient was still partially under the anæsthetic, and I have never seen any untoward result. The latter has been done as a preventative of vomiting after operation, and it is almost always successful. Pre-anæsthetic lavage I think may be always dispensed with provided we can maintain the head-to-the-side and one-shoulder-raised position, by which all vomited matter finds a ready exit.

Posture, then, is the main preventative of all the troubles incident upon the inhalation of ether. There are, however, some patients who probably have an unhealthy condition of the upper air-passages, who, in spite of the greatest care, cough and retch, and by their movements throw themselves out of the ideal posture, with the result that mucus loaded with ether is sucked into the laryngeal aperture, causing a spasm of glottis and alarming asphyxial symptoms. There are many recorded cases in which tracheotomy has been performed for the relief of this complication, but the spasm will invariably give way if you can open the mouth and bring the jaw forwards, being careful that the head is not in the extended or flexed positions. This is easier said than done, as the jaw is very powerfully clenched. By passing the finger behind the last molar teeth you can usually obtain room enough to pass a periosteal elevator, or handle of a knife, or, better still, a screw wedge gag, and quickly obtain room enough for a Mason's gag ; and when this is in position and the jaw pulled forward, a spontaneous inspiration usually takes place, but it may be necessary to sweep the finger over the glottis to dislodge mucus and press the base of the tongue forwards before the desired relief is obtained. Such spasm of glottis generally occurs before the patient is profoundly anæsthetised, but it may also occur after an operation as the narcosis is passing off.

Not long ago I was called out of the theatre to the ward to see a patient who had just been put back to bed after an operation. He was deeply cyanosed, and making efforts at respiration, but no air was entering the chest, and he was

lying with his face in the mid-line position, and the head slightly extended. On rectifying the position and forcing the mouth open, respiration at once took place. I think such an accident would never occur if patients were put back to bed with one shoulder raised and the head to the side, and I think it would be of less frequency upon the operating table if more care were taken in lifting and raising patients into the convenient position for operating. By even slightly jolting the head mucus is shaken over the glottis, and a spasm causing much trouble is the result.

Difficulties also arise from faulty posture during deep anæsthesia, as well as in the early stages of ether narcosis, and when coming round from the effects of ether. Cyanosis is frequently caused by the mucus being sucked into the trachea, where it is worked up and down by respiration into a thick tenacious froth, causing much obstruction to breathing. When such occurs there is nothing for it but to let the patient come sufficiently round to retch or cough it up. He may be brought round quickly by the administration of a little oxygen, but to have to do this in an abdominal operation is to incur the intense displeasure of the surgeon. In abdominal surgery, however, the correct posture with the head to the side may always be used, and obstruction from this cause should rarely occur. The only other trouble occurring during deep ether anæsthesia cannot be prevented by posture—I allude to the gradually failing heart. There is no doubt that some postures aid and abet a failing heart by interfering with respiration. Such are the completely prone position, as is used for laminectomy and for the operation of dividing loops of cervical nerves for spasmodic wryneck, aptly called by the dressers “amputation of the head.” At the same time we have the previously weak heart failing under ether, although the posture is not all that one could desire.

On this subject I dilated at some length when I last had the honour of addressing this Society, and my views have not undergone any change since that time. I believe that the failing heart is in a great measure brought about by chronic oxygen starvation. The efficient anæsthetist does not allow his patient to become evidently cyanosed ; but do

what he will, those with weak hearts become slowly grey during a long operation, and the pulse becomes fast and feeble. I think that the ether acts as a whip upon a weak heart under the most adverse circumstances possible, viz. with the blood very largely deprived of air. It was on account of holding this view that my two-bottle Junker's inhaler for mixing the vapours of ether and chloroform was designed. With this instrument you can administer varying proportions of chloroform and ether according to necessity, and in weakly children during prolonged operations, such as often take place for the removal of glands of neck, involving loss of blood and dragging upon the deep-seated nerves, you can, when they have been under a short time, keep up a satisfactory anæsthesia by ether alone, the only drawback being that it is necessary to impart the warmth of your hand to the bottle containing the ether to prevent its becoming too cold to give off sufficient vapour. It was also this view of chronic oxygen starvation as a cause of heart failure during long operations under ether that led to my innovation, only about three years ago, of using pure oxygen with ether. The idea is to give only such proportion of oxygen as would be equivalent to that found in fresh air; and although no mathematical accuracy has been yet arranged to do this, it is found in practice that a jet of the gas through a small pin-hole into the ether bag answers the purpose very well. To accomplish this I use a Beard's regulator, which is screwed on to the oxygen cylinder. This regulator has been in use for years for the production of the oxyhydrogen light, and by its means a very small tap will regulate the supply of the gas, and the supply can be easily cut off at any moment, even by kinking the india-rubber tube through which it passes. I think that no one who has tried this method will deny that it enables a weak heart to bear a longer administration of ether than would otherwise be the case. Moreover the oxygen seems to have a marked drying effect, so that the watery vapour exhaled into the ether bag is not re-inhaled to the same extent, or at any rate it is certain that patients inhaling oxygen with ether show a less tendency to the formation of mucus in the upper air-passages.

I have heard it stated that oxygen produces brilliant results during an operation, but that the patient collapses afterwards. This is certainly not my experience, and I believe when it occurs it is due to two causes—first, that the oxygen is given in too large a proportion ; and secondly, that the patient looking extremely well, the same heed is not given to the amount of ether administered, and the latter is given in excess of what is desirable or safe. It must be remembered that you can kill a patient with ether as you can with chloroform—it is only a question of amount. Ether in excess depresses the respiratory centre, while oxygen in excess produces apnœa.

The untoward after-effects of ether are vomiting and inflammatory effects on the bronchial tubes and lungs. These are mostly due to swallowing mucus impregnated with ether, and the sucking into the trachea of mucus contaminated with bacteria from the mouth. Posture will do a great deal to prevent mucus getting into the stomach, but it is impossible to prevent a certain amount of swallowing during the early stages of etherisation. I think since I have practised the shoulder-raised and head-to-the-side posture, the amount of vomiting after ether has compared very favourably with that of chloroform. I prefer to treat such vomiting by giving, as soon as the patient is sufficiently conscious, a tumblerful of hot water, and repeat in half an hour or so, or, better still, a warm tumblerful of normal saline, which dissolves the mucus, and if kept down is of more use to the patient. As it is unpleasant to take, the tabloids of normal saline may be swallowed.

The bronchitis and pneumonia following the use of ether can, I am confident, be prevented by the postures which permit of free drainage of the mouth. If the face mid-line head-extended position be required by the surgeon, then, if mucus is heard rattling up and down in the trachea, and the operation is not nearly finished, the choice lies between running the risk of pneumonia, or stopping the operation for a few minutes while the patient is turned to one side and allowed to recover sufficiently so as to retch or cough and so clear the air-way of the invading mucus.

Now to turn to chloroform for a few minutes before

closing my already too lengthy paper. Chloroform is said to be the anæsthetic of the general practitioner, because it is so easy to administer. It is undoubtedly due to the facility of its administration, and the fact that a large percentage of

FIG. 14.



Lateral posture with depending mouth, good for drainage in removal of inferior turbinate bones and similar operations.

people can take it in ordinary doses with impunity, that most of the fatalities occur. There is a minority to whom chloroform in ordinary doses is as fatal a poison as a toxic dose of prussic acid.

You ought always to approach a patient for the administration of chloroform as if he might be one of those susceptible people. If you commence it very slowly with a Junker's inhaler, or drop by drop upon a mask consisting of a single layer of flannel upon a frame, the patient tells you by his pallor and signs of falling blood-pressure that he is approaching the limit of safety before it is too late. Whereas, if you pour a drachm or two of chloroform upon a three-fold mask of lint and let your patient inhale it, if he should be one of those highly susceptible to the influence of the drug, his pallor will appear quite suddenly ; you feel for his pulse in vain, and find his respiration dying away, and you probably fail to resuscitate him.

Medical men often tell me that they always give chloroform copiously and fearlessly, and some claim to have done so hundreds of times without a fatality. All I have to say

is, that they have only to go on long enough to have a fatality. The rapid administration of chloroform is charming when it comes off all right, but every one who practises it runs a gauntlet. The late Mr. Clover, after much careful investigation, came to the conclusion that a mixture of chloroform and air to the extent of 4 per cent. was sufficient to produce a good anæsthesia, and was a safe dose for every one; and he invented an instrument for evaporating chloroform into a large bag of air, so that it contained a solution of the strength of 4 per cent. When I was a dresser the anæsthetist carried on his back a large bag containing several gallons of this solution. It was so generally successful, and at the time considered so safe, that I have no doubt some administrators were wanting in that extreme watchfulness so necessary at all times and with all methods of giving chloroform, and it was not long before a fatality was recorded with this 4 per cent. dilution. On the other hand, it was found to be a difficult and very lengthy proceeding to anæsthetise powerful men and alcoholics with it. Now the air will take up, I think, as much as 12 per cent. of chloroform, and if a couple of drachms are poured on to folded lint and held over the patient's nose and mouth, the first effect is that the pungency of the vapour makes him hold his breath, and then, after ceasing to breathe for several seconds, a very strong vapour will be awaiting him, which may be a fatal dose, when he can hold his breath no longer and makes a long inspiratory effort. Experience has taught us that there is no definite percentage of chloroform suitable for all cases, nor is one percentage suitable from beginning to end of an operation. The chart of an administration of chloroform should be very like the temperature chart of a typical case of enteric fever without the morning remission—beginning with a vapour so dilute that it can be inhaled with comfort, if not with positive pleasure, and very slowly rising to a point where anæsthesia supervenes, maintaining the strength of the vapour at that point for a time, and then slowly reducing to the end of the operation. It must be remembered that chloroform is a heavy vapour and apt to accumulate in the blood, so that the longer it is inhaled the less is required to keep to the

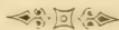
level of safety. The recumbent posture should always be maintained during the inhalation of chloroform should the nature of the operation permit, and should the operation necessitate the upright posture, as in some laryngeal manipulations, the narcosis should not be carried to a profound degree. Besides being recumbent, the patient should be so placed as best to maintain a free air-way and prevent stertor. It is best for the head not to be extended, and the jaw and tongue are less liable to drop back and obstruct the air-way if one shoulder is raised and the head turned towards the opposite side. Chloroform should not be given in the prone position or semi-prone position unless there are very strong objections to ether, as the weight of the body greatly interferes with respiration. I have already referred to this posture as aiding and abetting heart failure during the administration of ether, by obstructing respiration. Much more then would this be the case with chloroform, as the latter drug has been proved to diminish considerably the force of the respiratory act.

In conclusion, gentlemen, I will read you the carefully watched and recorded experience of an anæsthetic by one of our surgical Staff, who has kindly written the following account of his taking ether preceded by gas, administered by Mr. Crouch :—“ Administration commenced at 12.15. In eight deep respirations I was going off; did not count beyond eleven, I think. Under anæsthetic twenty to twenty-five minutes; woke up at 2.45; absolutely dreamless sleep until then, and came to consciousness most comfortably and gradually. Looked at my finger, realised it had been done, etc.; only felt giddy and bad when I raised my head, but managed to look at my watch. In few minutes drank a tumbler of warm water (quite hot), was sick once, and felt much better. Slept again till 4.30, had a cup of tea, tasted nastily of ether which seemed to saturate me; dozed and talked till 6.15, and then got up only slightly giddy; washed my teeth and mouth with “Pierre” (an aromatic tooth lotion good for taking away smell of smoke); this took away all taste of ether, but I still smelt of it, as a lady told me whom I took in to dinner, 7.30. Ate a fair dinner, and had a smoke, only suffering from a “fuzzy” headache. Slept well, but in

morning felt very seedy and heavy. This, I am sure, was biliaryness due to interference with internal secretions, *e.g.* tongue dry, bowels confined, etc. Slept a good lot that day, and felt rotten. Next morning absolutely well, owing to taking calomel and jalap. These are my chief impressions. The hot water is A 1; an aromatic mouth wash a good idea; and any method of keeping bowels going on day after operation is good, as I am sure ether upsets whole intestinal tract."

An eminent surgeon describes anaesthetics as being of two varieties. He says, as in cricket, there is the real game and the clown game. He described to me a case of the latter as recently occurring to him. The two surgeons and two nurses with great difficulty kept the patient upon the table whilst gas and ether was being administered, until at last chloroform was substituted and the patient promptly ceased to breathe. The tongue was dragged very forcibly forwards, and artificial respiration was performed, and the operation was finally concluded with the surgeon's elbow across the knees to prevent movement. Next morning the patient could not speak, for his tongue was literally too large for his mouth. Now St. Thomas's has always been noted for its games, and although it takes a little longer and requires much patience and perseverance, we want all St. Thomas's men to be efficient in playing the real game before they leave the Hospital.

St. Thomas's Hospital MEDICAL SCHOOL.



CALENDAR AND PROSPECTUS FOR THE YEAR COMMENCING OCTOBER 1ST, 1900.



1900 & 1901.

—
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THE ST. THOMAS'S HOSPITAL AMALGAMATED CLUBS.

The several Students' Clubs were amalgamated in July, 1888, and are maintained by the subscriptions of the Members, and by a yearly grant from the Medical and Surgical Officers and Lecturers.

The Amalgamated Clubs comprise the Students' Club, the Medical and Physical Society, the St. Thomas's Hospital Gazette, and the following Clubs :—Athletic, Chess, Cricket, Cross Country, Football (Rugby and Association), Lawn Tennis, Rifle, Rowing, and Swimming.

All Students are strongly advised to join the Amalgamated Clubs when they enter the Medical School. They are then able to spend the whole day at the School, all meals being obtainable at a moderate tariff, and they are further provided with facilities for exercise and recreation.

New Club premises adjoining the Medical School were opened in June, 1894. They contain a Dining Room (51 ft. x 39 ft.) and a Smoking and Reading Room (distinct from the School Library), 51 ft. x 29 ft., supplied with Daily and Illustrated Weekly Papers, and a Gymnasium. A Cloak Room with Lockers, and a Lavatory with Bath Rooms, "are in the main School-building.

A ground of more than nine acres in extent has been acquired for the Amalgamated Clubs. It is situated at Chiswick, and can be reached in 40 minutes from the Hospital, the fare being 7d. for a return ticket. It is admirably adapted for Football, Cricket, Lawn Tennis, and Athletic Sports. It is provided with a Pavilion where Refreshments can be obtained, and all Members have the use of it subject to the Rules of the various Clubs.

The Annual Subscription to the Amalgamated Clubs is Two pounds ten shillings for the 1st, 2nd, and 3rd years, and Two Guineas for the 4th and 5th years of Membership. After the payment of five consecutive subscriptions the Student becomes a Life Member.

Life Membership may be compounded for in the first year by payment of Eight Guineas; in other years, by payment of Seven Guineas.

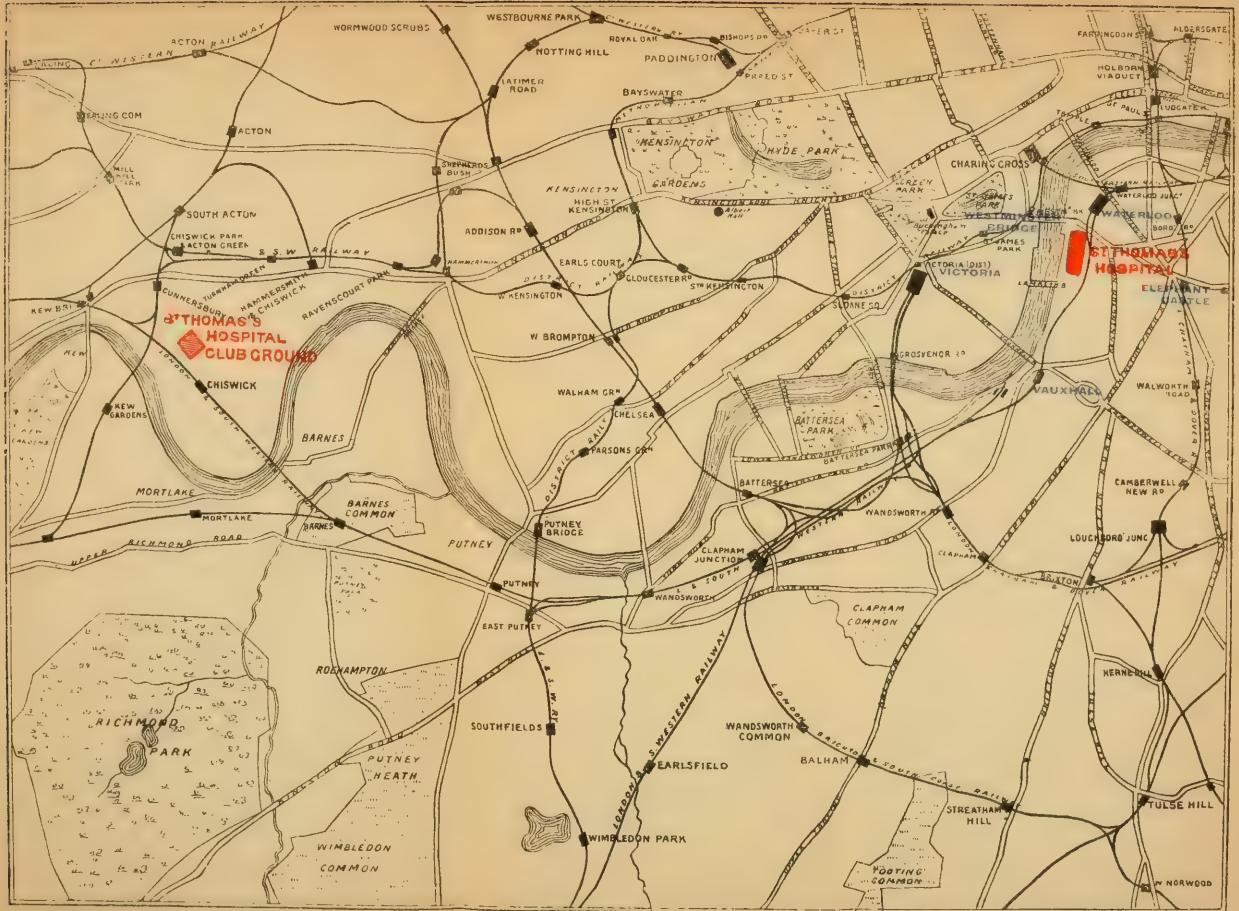
Subscriptions or Composition Fees may be paid to ~~the~~ Medical Secretary, Mr. G. RENDLE, or the Librarian, Mr. G. S. SAUNDERS.

MEDICAL SCHOOL.

A Register of LODGINGS suitable for Students has been recently revised, and is kept in the Secretary's Office. Information as to terms, accommodation, &c., can be obtained on application. This Register has been especially prepared with a view to the convenience of new Students for whose accommodation in lodgings or otherwise no definite arrangements have been made.

Medical Practitioners, Clergymen, and Private Families residing in the neighbourhood receive Students for residence and supervision.

For information on all matters relating to the Medical School, Prizes, Scholarships, &c., application should be made to the Medical Secretary, Mr. G. RENDLE, at the Hospital, Albert Embankment, S.E., personally (10 to 4, Saturday, 10 to 1) or by letter.



St. Thomas's Hospital

MEDICAL SCHOOL.

The WINTER SESSION 1900-1901 will commence on October 2nd, and terminate on March 31st.

The SUMMER SESSION will begin on May 1st, and terminate on July 31st.

The Prizes will be distributed by SIR WILLIAM MACCORMAC, Bart., K.C.V.O., in the Governors' Hall, on TUESDAY, October 2nd, at 3 P.M. During the afternoon the various Departments of the Hospital and School will be open for the inspection of Visitors.

Refreshments will be provided in the Student's Club.

The Annual Dinner, in which all former and present Students are invited to join, will take place the same evening at the Whitehall Rooms, Hotel Métropole, at 6 for 6.30 o'clock, DR. C. TAYLOR AVELING in the Chair.

THE first Hospital of St. Thomas, within the precinct of the Priory of St. Mary Overie, being destroyed by fire in the year 1207, the prior and convent erected in the same year near the site of their house a temporary hospital. This building was in the emergency used for religious purposes ; mass was said there until the priory was rebuilt. In 1228 Peter de Rupibus, Bishop of Winchester, built the Hospital of St. Mary or St. Thomas. Overie, on the opposite or eastern side of the highway, on land provided by Amicius, Archdeacon of Surrey, and dedicated it to St. Thomas the Martyr.

The following is a translation of the "charter" of 1228 :—

"The Lord Peter's charter of indulgence for twenty days granted by him for this hospital.

"Peter, by the grace of God Bishop of Winchester, to all the faithful in Christ in the diocese of Winchester, greeting. In Him who is the salvation of the faithful. As saith the Apostle, bodily discipline which consists in fasts, vigils, and other mortifications of the flesh, profiteth little, while piety availleth for all things, having the promise of the life which now is, and of that which is to come.

"Our Lord Jesus Christ among the works of piety enumerates, commends, and teaches us to fulfil six, as though more praiseworthy and more meritorious than the rest, saying, 'I was an hungry, and ye gave Me to eat ; I was thirsty, and ye gave Me to drink ; I was a stranger, and ye took Me in ; I was naked, and ye clothed Me ; I was sick, and ye visited Me ; in prison, and ye came to Me.' To them that perform these works of piety He shall grant His blessing and the glory of His heavenly kingdom, saying, 'Come, ye blessed of My Father, receive the kingdom which has been prepared for you from the beginning of the world.' But to them that neglect and do not perform works of compassion He threatens His curse and the penalty of eternal fire, saying, 'Go, ye cursed, into eternal fire, which has been prepared for the devil and his angels.' It is therefore to be borne in mind, my dearest sons, and more deeply laid to heart, how needful and how conducive to the salvation of our souls it is to exercise more readily

those works of piety whereby blessing is promised to us, and the felicity of eternal life is gained.

"Behold at Southwark an ancient hospital, built of old, to entertain the poor, has been entirely reduced to cinders and ashes by a lamentable fire. Moreover, the place wherein the old hospital had been founded was less suitable, less appropriate for entertainment and habitation, both by reason of the straitness of the place, and by reason of the lack of water and of many other conveniences : according to the advice of us, and of wise men, it is transferred and transplanted to another more commodious site, where the air is more pure and calm, and the supply of water more plentiful. But whereas this building of the new hospital calls for many and manifold outlays, and cannot be crowned with its due consummation without the aid of the faithful, we request, advise, and earnestly exhort you all, and with a view to the remission of your sins enjoin you, according to your abilities, from the goods bestowed on you by God, to stretch forth the hand of pity to the building of this new hospital, and out of your feelings of charity to receive the messengers of the same hospital coming to you for the needs of the poor to be therein entertained, that for these and other works of piety you shall do, you may, after the course of this life, reap the reward of eternal felicity from Him who is the Recompenser of all good deeds, and the loving and compassionate God. Now we, by the mercy of God, and trusting in the merits of the glorious Virgin Mary, and the Apostles Peter and Paul, and St. Thomas the Martyr, and St. Swithin, to all the believers in Christ, who shall look with the eye of piety on the gifts of their alms—that is to say, having confessed, contrite in heart and truly penitent, we remit to such twenty days of the penance enjoined on them, and grant it to them to share in the prayers and benefactions made in the church of Winchester, and other churches erected by the grace of the Lord in the diocese of Winchester. Ever in the Lord ; Farewell."

The Bishop of Winchester or the Archbishop seems to have granted, in 1277, to the Brethren power to elect their own Master ; in a visitation, 1323, they are ordered to follow the rule of St. Augustine—the rule of the parent house—in obedience, chastity, renunciation of individual property, and the Master to eat with the Brethren.

In 1417 the Master and Brethren formed a Court of themselves, and exercised authority within the precincts of the Hospital over persons regular or secular, and in cases civil or even criminal.

The hospital, built in 1228, had by 1507 become dilapidated and insufficient ; great efforts were then made to rebuild and enlarge it.

In the Duchy of Lancaster records there is "the Rentall of Thomas Becketts hospitall in Southwarke, of all the lands and tenements belonging to the hospital." It contains the names of the tenants and the rents paid ; it is without date, but from internal evidence must be early in the sixteenth century.

Within the precincts of the hospital was the renowned printing press of James Nycolson, who, in 1527, signed the contract for the painted windows of King's College, Cambridge, as "James Nycolson, of St. Thomas's Spyttell in Southwark." The most remarkable issue from this press was the first English Bible printed in England, inscribed thus—"Imprynted in Southwarke in St. Thomas Hospitale by James Nycolson. Dedicated by M. Coverdale to the King 1537."

About this time there were a Master, Brethren, and three Lay Sisters ; forty beds were made up for poor, infirm and impotent people, who were supplied with victuals and firing.

In the year 1535, Henry VIII. was excommunicated by Pope Paul III., and, declaring himself head of the church, proceeded to dissolve the Catholic houses, whose large revenues went to the Crown. There seem to have been 645 monasteries and abbeys thus treated, twenty-eight of which had abbots

with seats in Parliament, ninety colleges and free chapels, and 110 hospitals of various descriptions. It is certainly in favour of the sweeping change that so able and honest a man as Sir Richard Gresham, the Lord Mayor of London, should have put his hand to the following petition to the King :

" Most redowted, puytant, and noble Prince * * *—here and within the cytie of London be ijij hospitalls or spytells commonly called Seynt Georges Spytell, Seynt Barthilmews Spytell, and Seynt Thomas Spytell, and the new Abbey of Tower Hill, founded of good devotion by auncient fathers and endowed with great possessions and rents only for the relieve, confort, and helping of the poore and impotent people lying in every street, offendynge every clene person passing by the way with theyre fylthy and nasty savors. Wherefore may it please your merciful goodness, enclyned to pytie and compassion, for the reliffe of Xts very images, created to his own similitude, to order by your high authoritie, as supreme head of this Church of England, or otherwise by your sage discretion, that your mayer of your cytie of London, and his brethren the aldermen for the time being, shall and may from henceforth have the order, disposition, rule and governaunce both of all the lands, tenements, and revenues apperteyning and belongyn to the said hospitals, governors of them, and of the ministers which be or shall be withyn any of them, and then your grace shall facilie perceyve that where now a small number of Chanons, Priests, and Monkes be founde for theyr own profit only, and not for the common utilitie of the realme, a great number of poore, needy, syke and indugent personnes shall be refreshed, maynteyned, and comforted: and also healed and cured of their infermitiis frankly and freely by physicions, surgeons and potycaries, which shall have stipende and salari only for that purpose; so that all impotent personnes not able to labour shall be releved, and all sturdy beggars not willing to labour shall be punished."

St. Thomas's Hospital being claimed by the King as Church property, was surrendered to him by Thomas Thirleby, the then master, on the 15th July, 1538. It was called St. Thomas à Becket's Spittel. Its yearly revenue was estimated at £266 17s. 6d., and an annual pension of 5s. 8d. was payable by the master, and another of 2s. 1d. by the curate, to the Archdeacon of Surrey. Soon after the seizure, we find that the citizens of London purchased of the Crown some of its landed estates, producing about £160 yearly. The want of the hospital thus destroyed was felt immediately. Wounded soldiers from the army in France, and the sick poor in general were without provision or help, and Henry proposed granting to the city the Mansion house of St. Bartholomew's, the dissolved house of Grey Friars adjoining, and the unoccupied fabric of St. Thomas's Hospital. The latter was intended by Henry to receive the name of the Hospital of the Holy Trinity, and to be allotted exclusively to lame, wounded, and diseased soldiers. The monastery of Grey Friars was to be for the education and maintenance of fatherless children and those of poor parents. The intentions of Henry were overtaken by death, but not before he had conferred upon the citizens of London the Hospital of St. Bartholomew's and also that of Bethlem for lunatics.

It is from the death of Henry that the connection of St. Thomas's Hospital with the City of London appears to begin. To meet the needs of the sick and destitute who had before depended on the charity of the religious houses, a Committee or Board of Inquiry was instituted by the citizens, with the sanction of King Edward. About 2,100 souls were reported as fit recipients of relief, as fatherless children and invalids, or as "Idle rogues of both sexes who were levying contributions on public sympathy by feigned tales of sorrow." It was proposed to establish receptacles for each class in the unoccupied monastic buildings, and a pecuniary contribution was set on foot to complete the work. They bought the dissolved house of the Franciscans or Grey Friars near St. Bartholomew's Hospital, and also by charter from the King received a grant as follows : " That the said mayor, commonalty, and

citizens, and their successors, may have and enjoy all the franchises, immunities, and privileges whatever, which any Archbishop of Canterbury, and which the said Charles late Duke of Suffolk, or any master, brethren, or sisters of the late Hospital of St. Thomas in Southwark aforesaid; or any Abbot of the said monastery of St. Saviour, Saint Mary Bermondsey, next Southwark aforesaid, or any prior and convent of the priory of St. Mary Overie, ever had or enjoyed, or which we hold or enjoy, or our most dear father Henry the VIIIth, late King of England, or had enjoyed, or ought to have, hold, and enjoy the same: and that none of our heirs or successors may intermeddle with this our grant."

The Grey Friars became Christ's Hospital, and the Southwark site the Hospital of the Holy Trinity or St. Thomas's. The Lord Mayor and certain citizens then met on the 6th of October, 1552, and constituted themselves by royal permission governors of the Hospitals, and almoners of the money collected. The Hospital of the Holy Trinity they named in compliment to Edward, the "King's Hospital," and ordained it to receive 260 "wounded soldiers, blind, maimed, sick, and helpless objects."

They also directed that 380 children should be received into Christ's Hospital.

To complete the scheme, the old palace of Bridewell, in Blackfriars, where the Emperor Charles V. had lodged in 1522, when on a visit to Henry VIII., and where subsequently Wolsey had lived, was granted to the City by Edward as a house of correction for dissolute persons and idle apprentices, and for the temporary maintenance of distressed vagrants.

Lastly, the lands lately belonging to the Palace of the Savoy were conferred jointly on the three foundations; and a month only before the end of Edward's short reign, he incorporated by a second charter bearing date the 6th of June, 1553, the Lord Mayor and commonalty of the City of London in succession as perpetual governors of Saint Bartholomew's, Christ's, Bridewell, and the King's Hospital (which last received the name of ST. THOMAS THE APOSTLE), and secured to them the possession of all the estates and revenues appertaining to them by previous deeds of gift. So were the royal hospitals founded.

In 1557 the laws were framed and printed under the name of "The Order of the Hospitalis of K. Henry the VIII. and K. Edward the VI., viz., St. Bartholomew's, Christ's, Bridewell, St. Thomas's. By the Maior, Cominaltie, and Citizens of London," &c.

Successive bequests and donations continued to augment the property of the charities, but during the reigns of Elizabeth, James I., Charles I., and the Protectorate, there appear few facts to note. In the abstract of the charter of confirmation granted to the City in 1663 by Charles II. on his restoration, we find the charter of Edward acknowledged and confirmed. The Great Fire of London in 1666 injured St. Thomas's in its revenues only; and a fire in Southwark anno 1676 ceased, "as if by divine interposition," at the hospital, probably a strong and isolated block of building. Shortly after this, however, it was found necessary to rebuild the fabric, and in 1693 subscriptions were opened for this purpose. A long list of benefactions in this and the succeeding year, amounting in all to £37,769 3s., is given by Golding, who especially singles out Sir Robert Clayton for eulogium. The statue then erected to him, and still extant, was originally dated 1701, but this was altered on his death to 1714. He was the founder of the old square in which it stood, replacing what Golding terms "a low swampy structure of the monastic order." In 1707, Mr. Guy, founder of the neighbouring hospital, erected three wards at his own charge. In 1717, the back block of buildings adjoining Guy's Hospital was added. With the exception of the two large blocks forming the Borough frontage, the north wing erected in 1833, and the south

wing in 1839, the fabric seems to have remained unchanged until its purchase by the railway. In the centre of the front quadrangle stood the brass statue of King Edward, by Scheemakers, erected first in 1737, in pursuance of the will of Charles Joye, some time treasurer of the hospital. It now stands in the grounds of the New Hospital.

It is a matter of more difficulty to trace the early history of the medical school in connection with the hospital. For the facts which follow we are indebted to the late R. G. Whitfield, Esq., who, from the long period during which his family had been associated with this foundation, was perhaps more qualified to speak than any other person.

The earliest mention in the hospital books of an apprentice is on December 31st, 1561. It is not until 1702 that a law is met with precluding pupils or surgeons from dissecting the dead body without permission from the treasurer.

In 1703 the grand committee resolved that no surgeon should have more than three "Cubbs," a term altered in 1758 to that of "Dressers." Besides these there were also apprentices to the surgeons of the hospital, and ordinary pupils. The first mention of lectures occurs soon after the appointment of Wm. Cheselden, in 1718. These he at first gave at his own house, but afterwards by permission in the hospital. They were on anatomy and surgery. In 1723 a regular registry was ordered to be kept by the apothecary, of pupils entering to surgical practice. In 1725, Guy's Hospital was opened for the reception of patients. In 1751 the assistant-physician was allowed to take two pupils for his own benefit. In 1768 an additional surgeon, Mr. Joseph Else, was elected to read lectures to the pupils.

The students of Guy's Hospital had by courtesy been allowed to attend the operations, and a similar favour admitted the St. Thomas's men to those at Guy's. But on the 8th November, 1768, it was formally resolved that the pupils of each hospital have the liberty of attending not only the operations, but surgical practice, and the money to be divided between the six surgeons and two apothecaries. Hence the appellation of the "United Hospital"; an amalgamation never extended beyond the surgical practice.

To Mr. Else is due the foundation of a regular anatomical school. Mr. Cline, who in 1781 was appointed to read lectures conjointly with Mr. Else, was mainly instrumental in bringing it to its greatest celebrity. At Mr. Else's death, Mr. Cline purchased the collection of preparations made by him and Mr. Girle, a former surgeon, which are now in the hospital museum, and became sole lecturer on anatomy. In 1788 he also became surgeon to the hospital. Mr., afterwards Sir Astley, Cooper was apprenticed to Mr. Cline in 1784, and before his election, as one of the surgeons to Guy's Hospital in 1800, was joint lecturer with his teacher on anatomy and surgery. They both added materially to the pathological museum.

In 1812 Mr. Henry Cline was elected surgeon to St. Thomas's Hospital on his father's resignation, and carried on the anatomical lectures conjointly with Astley Cooper. In 1813 a new anatomical theatre and museum were built, the hospital giving £3,000 for the purpose, and the two lecturers £1,000 each. In 1815 Mr. Benj. Travers, an apprentice of Astley Cooper's at Guy's, was elected surgeon, according to the established rule which gave the vacancy to the senior apprentice of either institution. Mr. Travers joined in the lectures, devoting his attention specially to ophthalmic surgery. In 1820 Mr. Joseph Henry Green was elected surgeon, on the death of his cousin, Mr. Hy. Cline, having been apprenticed to his uncle, Mr. Cline, in the year 1809. From 1820 to 1825 he lectured with Astley Cooper. At this period all the branches of medical study,—viz., medicine, chemistry, *materia medica*, midwifery, botany and physiology—were lectured on at Guy's Hospital, and no physician of St. Thomas's was allowed to share them.

In 1824 Sir A. Cooper resigned the surgical chair, and Mr. C. Aston Key, his apprentice and nephew by marriage, joined Mr. Green in the office. Mr. Frederick Tyrrell, standing in exactly the same relation to Cooper, received permission to lecture on diseases of the eye. In the following year Cooper showed signs of cerebral disturbance, and the family desired that his nephew, Mr. Bransby Cooper, should be his successor. But the claims of Mr. John Flint South were considered superior, and he was appointed. From this cause the "United Hospitals" were severed, and a complete school set up in both. The majority of the students clung to Guy's where the prestige of the great Sir Astley was still strong : and St. Thomas's school began to sink. The establishment of the Aldersgate Street private school under Tyrrell and Lawrence materially aided in this declension, as did also the secession of Dr. Elliotson to the newly-established University College, and the foundation of a fresh school at King's College, where for a time the surgical lectures were given by Mr. Joseph Henry Green, although a surgeon of St. Thomas's.

Owing to the unprosperous state of affairs in 1842, the Governors came forward to reorganize the school, and the aid of Mr. R. D. Grainger, whose popularity had been established in the Webb Street private school, was obtained. Mr. Joseph H. Green also rejoined the school ; and Dr. Marshall Hall, Dr. Hodgkin, Dr. Martin Barry, Dr. Gregory, and Mr. Benjamin Travers contributed to its efficiency. In 1847 the Governors added to the School a lectureship on general pathology in connection with the hospital practice, and appointed to that lectureship and the associated clinical duties Mr. John Simon, whom afterwards (1853) they made one of the surgeons. In 1855 they added a lectureship on public health, and appointed to it Dr. Headlam Greenhow, who afterwards became physician to the Middlesex Hospital. This state of affairs continued until 1858, when the Governors gave back the management, and its attendant risks, into the hands of the lecturers.

For some years it was maintained with difficulty, and much self-sacrifice on the part of the staff, during what may be termed a transitional period, in the hope, now realized, of its once more developing into an institution worthy of its old traditional glories.

From its foundation down to the year 1862, the hospital occupied the original site near London Bridge, but in that year the property was sold for the extension of the railway accommodation, and the establishment temporarily removed to the Surrey Gardens, where it was carried on till the summer of 1871. In 1868 the first stone of the New Hospital at Westminster Bridge was laid by the Queen, and the completed building was opened by her Majesty in 1871. In September the patients were first admitted into the New Hospital, and the Medical School was opened on October the 2nd.

NIGHTINGALE NURSING SCHOOL.

The Committee of the "NIGHTINGALE FUND" have arrangements with the authorities of St. Thomas's for educating Women in the practice of Hospital Nursing. On the satisfactory completion of one year's probationary training, they will be required to enter into service as Nurses in St. Thomas's or some other Hospital or Infirmary. A limited number of gentlewomen can be admitted under special agreements to this course of training, with a view to qualify themselves for superior appointments, or as District Nurses.

The Regulations as to the admission of Candidates may be obtained by writing to Miss L. M. Gordon, the Matron, St. Thomas's Hospital, London, S.E., to whom also application should be made by Institutions requiring trained Superintendents or Nurses.

Candidates should, whenever it is possible, make personal application to Miss Gordon, at the Matron's Office, at 10.30 a.m. on Tuesday or Friday.

The Nightingale Fund is the proceed of a public subscription raised at the close of the Crimean War, as a tribute to Florence Nightingale, for the services rendered by her in tending the sick and wounded soldiers in the Military Hospitals on the Bosphorus and at Balaklava. It was, by her request, vested in Trustees to enable her to establish an Institution for the training, sustenance, and protection of Nurses and Hospital attendants, and, as invested, produces an income of £1,400. The Fund is managed by a Council, appointed by her. The School was opened at old St. Thomas's in 1860 with 12 probationers, increased to 50 at the present time. More than 2,000 applications are received annually. 1,621 candidates have been admitted and 941 trained nurses have received appointments; many of these are now Matrons or Superintendents of Nurses.

The Secretary to the Council is Mr. Henry Bonham-Carter, 5 Hyde Park Square, W.

THE HOSPITAL.

The original Hospital latterly contained 500 beds. The present building contains in all 572 beds. It consists of six blocks appropriated to the reception of patients; with one for the administrative and other offices, and one for the Medical School. The Ward blocks, though connected by corridors, stand apart, so as to afford free exposure in all directions. The Wards, with the exception of four which are placed on the ground floor, occupy the first, second, and third floors. Generally, each Ward affords accommodation for 28 beds, which are placed against the piers between the windows, so as to secure thorough ventilation. In a small Ward annexed to each larger Ward there are two beds for cases requiring special care or treatment.

During year 1899 a Ward was specially re-arranged for the reception of Male accident cases, with a view to ensuring quietness in the other Surgical wards. The ward fittings and furniture have been brought up to the most recent requirements. A small theatre has been instituted in place of the original bathroom for the performance of the minor operations necessary, and two small wards are provided for the isolation of noisy cases.

The two large Operating Theatres are now undergoing alterations, by means of which the Hospital will obtain two Children's Wards and four Operating Theatres.

The Casualty Department is also to be enlarged to obtain more spacious receiving rooms, and a larger number of small rooms for the examination of patients. The Eye Department is to be altered and a new Operating Theatre constructed.

A Clinical Laboratory, which is quite distinct from the laboratories in the Medical School, has been recently erected on the east side of the Hospital, and is provided with every facility for bacteriological, microscopical, and chemical examination of the condition of the patients in the Wards. The investigations are carried on in the laboratory by the Superintendent, whose whole time is devoted to this work, which comprises all those methods of examination which from their difficulty and complexity cannot be carried out at the bed-side, and they have in view the completion of the Hospital record of each patient.

Of the whole accommodation of the Hospital, about 210 beds are appropriated to Medical cases, and 270 to Surgical cases. There are special Wards for the reception of diseases peculiar to women (30 beds); for diseases of the eye (25 beds); and for children under 6 years of

age (30 beds). In one of the blocks, separated from the rest of the establishment, there are Wards for infectious diseases.

The space provided for each bed in the ordinary Wards is upwards of 1,800 cubic feet, and in the block appropriated to infectious diseases, about 2,500 cubic feet.

The Department for Out-patients has been recently re-arranged, and it is now perfectly adapted both for the management and treatment of patients and for the teaching of students. There have been added two large rooms, well ventilated, well lighted, provided with ample sitting accommodation, so arranged that large numbers of Students are able to follow and grasp the method of examination and the basis of treatment employed by the Assistant-Physician and Assistant-Surgeon.

During the past year a very complete aseptic operating room has been added to the Department, in order that the minor operations may be performed under the most satisfactory conditions.

The Ophthalmic Department comprises a well-arranged out-patient room, a dark room for ophthalmoscopic examination, and an operating room.

There is also a series of rooms devoted to the other special departments, and a room set apart and fitted up for Physical Exercises.

A very complete department for the systematic use of the Röntgen Ray photography has been fitted up at considerable expense, and has proved to be of great value as an aid to diagnosis.

During the twelve months ending December 31st, 1899, the number of patients admitted into the Hospital amounted to 5,831. In the same period, 18,549 Out-patients have been treated, and in the Maternity department 2,471 women have been attended at their own homes. Casualties, to the number of 94,836 attendances, were treated during the same period.

THE MEDICAL SCHOOL.

The School buildings, isolated by a large quadrangle from the Hospital, stand at its southern extremity, between the river and the gardens of Lambeth Palace. They are very commodious, and every effort has been made to provide accommodation completely fulfilling modern requirements.

In the year 1885 the Anatomical Department was much enlarged and remodelled. In 1892 considerable alterations were carried out in the Physiological Department, giving increased space in the Laboratory and providing facilities for lectures and lantern demonstrations. In 1893-4 further extensive alterations were made. Two new wings were added to the main building, containing a large laboratory for the classes in Elementary Biology and Pathology, private working rooms for the teachers in those departments, a dissecting room for the Biology class, improved accommodation for the Operative Surgery class, and a large class room for the classes in Practical Surgery. At the same time the collection of Physical Apparatus was removed to a laboratory *en suite* with the Chemical Department.

New premises were also provided for the Students' Club, to which a Gymnasium has been added, and the arrangements are now such as to render it quite unnecessary for Students to leave the School buildings during the working hours of the day. Electric Lighting has been introduced into the new departments and part of the older building.

The plan inserted between pages 14 and 15 shows the changes in detail, both on the ground and first floors.

THE MUSEUM OF HUMAN AND COMPARATIVE ANATOMY AND PATHOLOGY.

Curator.—S. G. SHATTOCK, Esq., F.R.C.S.

The Museum, which is of ample size and well lighted, has two galleries devoted entirely to the display of specimens illustrating Pathology; the different series are each preceded by a normal preparation of the organ to which they refer.

On the ground floor are the collections of Normal Human, and of Comparative Anatomy; there is, moreover, a series of type specimens of Pathology, selected to facilitate the study of this subject.

THE COLLECTION OF HUMAN ANATOMY contains a large number of dissected Preparations, illustrating the individual Organs, and in addition a series of elaborate dissections.

THE PATHOLOGICAL COLLECTION contains above 3,000 specimens, arranged in series as follows:—Injuries and Diseases of the Organs of Motion: of the Organs of Digestion, of Circulation, of Respiration, of the Nervous System, of the Genito-Urinary System, and Malformations. The descriptive Catalogue of this collection has been entirely re-written by Mr. Shattock: the previous edition was edited by Mr. Sydney Jones.

Among the earliest contributors to the Museum were Mr. Cline, Sir A. Cooper, Mr. Travers, and Mr. Tyrrell; and many of the specimens are of great historical interest; those used by Sir A. Cooper to illustrate his works on Dislocations and Fractures, on Hernia, and on the Testis, are contained amongst them, as well as two preparations showing the result of Ligature of the Abdominal Aorta, one a case of Sir A. Cooper's, another that of Mr. J. F. South's. In the collection, too, are Mr. Travers's preparations illustrating the process of nature in repairing Injuries of the Intestines, and those furnished by his experiments on the ligature of Arteries.

The section of Fractures has been enriched by Sir William MacCormac, who presented numerous specimens of gun-shot injuries, etc., obtained from cases under his care during the Franco-German War (1870); that of Diseases of the Liver, by a large number of Biliary Calculi presented by Dr. Ord; and that of Diseases of the Larynx, by specimens presented by Sir Felix Semon.

The marble bust of G. B. Morgagni in the Museum was the gift of an Italian Committee, which included the chief Professors at the various Italian Universities. It was formally presented to the Hospital by the Italian Ambassador in October, 1899.

THE COLLECTION OF COMPARATIVE ANATOMY comprises about 400 dissected Preparations, and in addition an equal number of most carefully prepared osteological specimens. A large number of these dissections were made by Sir A. Cooper, to illustrate his Lectures, when Professor of Comparative Anatomy to the Royal College of Surgeons. A new Catalogue of this collection has been drawn up by Mr. F. G. Parsons.

THE CABINETS OF MICROSCOPICAL ANATOMY, which are under the charge of the Demonstrator of Practical Physiology, are available for

use by Students who wish to examine them, subject to such regulations as may be deemed necessary.

THE MATERIA MEDICA MUSEUM contains in cases a complete collection of all the chemicals and organic substances included in the British Pharmacopea ; all these are named and numbered. A second collection of all the chief medicinal substances is placed in drawers and is freely accessible to students. A large and very fine collection of dried medicinal plants, named according to the latest nomenclature, is displayed on the walls of the Museum.

The Museum is under the conjoint superintendence of the Lecturer on Pharmacy and Pharmacology and Mr. Shattock.

THE COLLECTION OF CHEMISTRY AND MINERALOGY is under the superintendence of Mr. Dunstan. The majority of the specimens were presented by the late Dr. Bernays.

The Museums are open to Students daily from 9 a.m. till 5 p.m., and every encouragement is given to Students to make use of the well-arranged educational series.

THE LIBRARY.

Librarian :—G. S. SAUNDERS, Esq.

The Library, to which Students have access with the permission of the Librarian, and which can be used by them as a Reading Room, has been recently completely re-arranged and re-catalogued, and electric lighting has been introduced. It contains a valuable collection of standard works ; various periodicals are regularly taken in, and a number of modern text books are added from time to time for reference.

LABORATORIES, THEATRES AND CLASS ROOMS.

The Chemical, Physiological, and Anatomical Departments are complete in themselves. They consist of large Laboratories for Classes, Private Laboratories, and each is provided with its own Lecture Room. A separate Laboratory for the practical teaching of Physics contains the Physical Apparatus.

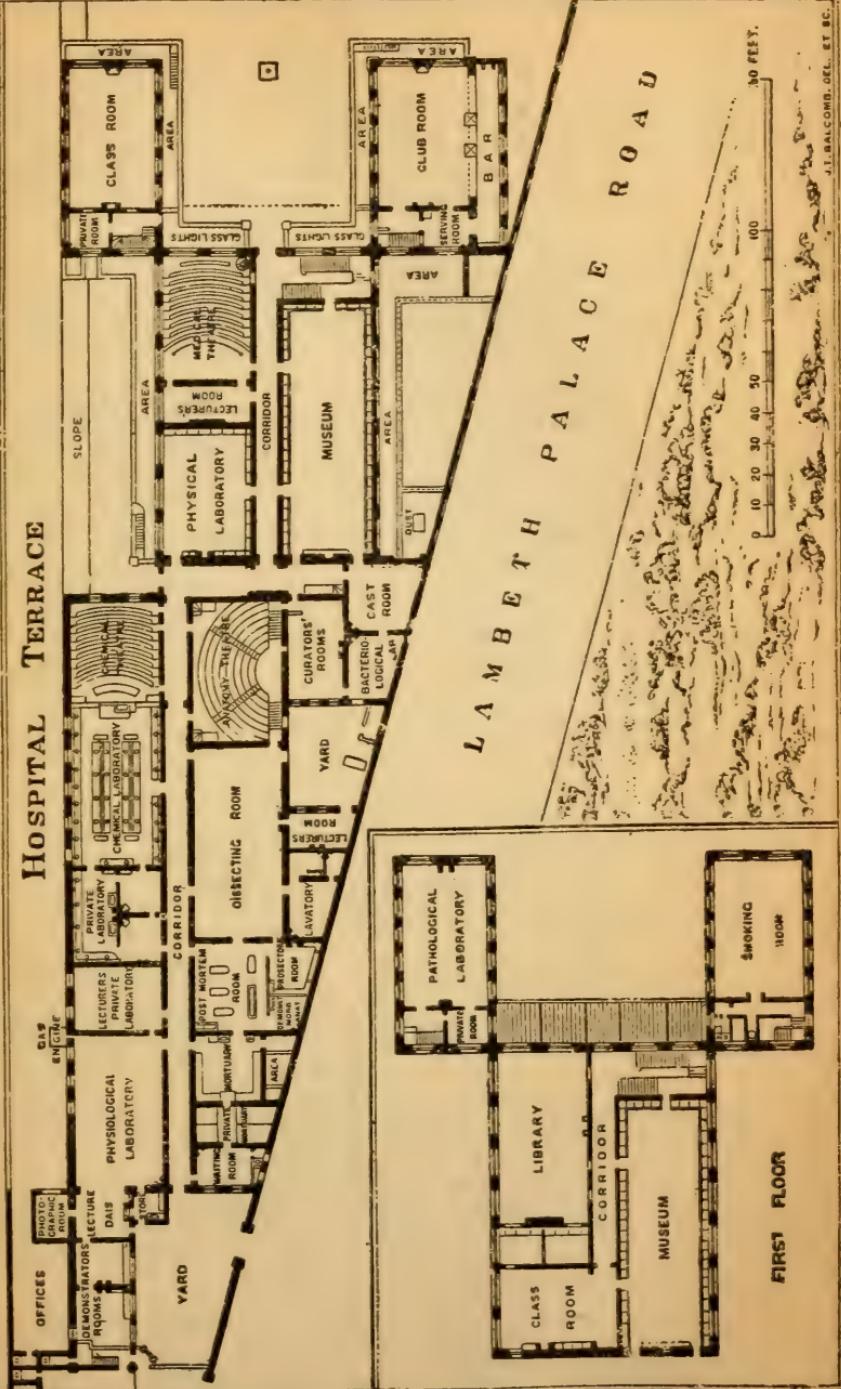
The Pathological Department beyond the Museum and Post Mortem rooms is provided with a large Laboratory for the Class in Pathological Histology, and a Bacteriological Laboratory under the charge of Mr. Shattock.

The Elementary Biology lectures and demonstrations are given in the large new Laboratory, and the Biological Dissecting Room and Lecturers' Private Room are contained in the same building.

A special Theatre is devoted to the use of the Lecturers giving the more advanced systematic courses, such as Medicine, Surgery, &c., and two large class rooms are available for the Tutorial Classes held in connection with these courses. Special accommodation has also been provided for the Classes in Operative Surgery.

The new buildings were opened by H.R.H. the Duke of Connaught, K.G., President of the Hospital, on June 9th, 1894.

REVIEWS



To face p. 14.

MEDICAL AND SURGICAL OFFICERS.

Consulting Physicians.—JOHN HARLEY, M.D. Lond., W. M. ORD, M.D. Lond., J. F. PAYNE, M.D. Oxon.

Consulting Surgeons.—Sir JOHN SIMON, K.C.B., Hon. M.D. Dub., F.R.S., D.C.L.; SYDNEY JONES, M.B. Lond.; JOHN CROFT; Sir WILLIAM MACCORMAC, Bart., K.C.V.O., M.A., D.Sc., M. Ch. Hon. Causâ, Pres. R.C.S. Eng.

Consulting Obstetric Physician.—H. GERVIS, M.D. Lond.

Consulting Ophthalmic Surgeons.—R. LIEBREICH; E. NETTLESHIP.

Physicians.

S. J. SHARKEY, M.A., M.D. Oxon.
T. D. ACLAND, M.A., M.D. Oxon.
H. P. HAWKINS, M.A., M.D. Oxon.
H. W. G. MACKENZIE, M.A., M.D. Cantab.

Obstetric Physician.

C. J. CULLINGWORTH, M.D.
Assistant Physicians.
H. G. TURNERY, M.A., M.D. Oxon.
J. J. PERKINS, M.A., M.B. Cantab.
W. S. COLMAN, M.D. Lond.
C. R. BOX, M.D. Lond.
Assistant Obstetric Physician.
W. W. H. TATE, M.D. Lond.
Children's Department.
C. R. BOX, M.D. Lond.
Throat Department.
H. B. ROBINSON, M.S. Lond.
Ear Department.
F. C. ABBOTT, M.S. Lond.

Resident Assistant Physician.

A. E. RUSSELL, M.D. Lond.

Surgeons.

H. H. CLUTTON, M.A., M.C. Cantab.
WILLIAM ANDERSON.
B. PITTS, M.A., M.C. Cantab.
G. H. MAKINS.

Ophthalmic Surgeon.

J. B. LAWFORD.
Assistant Surgeons.
W. H. BATTLE.
C. A. BALLANCE, M.S. Lond.
H. B. ROBINSON, M.S. Lond.
F. C. ABBOTT, M.S. Lond.
Assistant Ophthalmic Surgeon.
J. H. FISHER, B.S. Lond.
Electrical Department.
H. G. TURNERY, M.A., M.D. Oxon.
Skin Department.
WILLIAM ANDERSON.
Dental Department.
Surgeon.—C. E. TRUMAN, M.A. Cantab.

Resident Assistant Surgeon.

C. S. WALLACE, B.S. Lond., F.R.C.S.

Anæsthetists.

WALTER TYRRELL, E. H. G. MORRIS, B.A., M.B. Cantab.,
H. LOW, M.A., M.B., B.C. Cantab., H. C. CROUCH.

Demonstrators of Morbid Anatomy.

J. J. PERKINS, M.A., M.B. Cantab., W. S. COLMAN, M.D. Lond.,
C. R. BOX, M.D. Lond.

Consulting Chemist.

WYNDHAM R. DUNSTAN, M.A. Oxon., F.R.S. EDMUND WHITE, B.Sc. Lond.

Superintendent of the Clinical Laboratory. Superintendent of the X Ray Department.
L. L. JENNER, M.A., M.B. Oxon. A. BARRY BLACKER, M.D.

Registrars.

<i>Medical.</i>	<i>Surgical.</i>	<i>Obstetric.</i>
A. W. SIKES, M.D. Lond.	E. M. CORNER, M.A., M.B., B.C. Cantab. F.R.C.S.	J. S. FAIRBAIRN, M.A., M.B., B. Ch. Oxon., F.R.C.S.

Lecturers.

A. W. BENNETT, M.A., B.Sc. Lond.	H. RAYNER, M.D.
WYNDHAM R. DUNSTAN, M.A., F.R.S.	EDWARD C. SEATON, M.D.
J. B. LEATHES, M.B., B.Ch. Oxon.	S. G. SHATTOCK, F.R.C.S.
F. G. PARSONS, F.R.C.S.	

Curator of the Museum.

S. G. SHATTOCK, F.R.C.S.

Librarian.

G. S. SAUNDERS.

Dean of the School.

H. G. TURNERY, M.A., M.D. Oxon.

Secretary to the School.

GEORGE RENDLE, M.R.C.S.

LECTURERS AND DEMONSTRATORS.

LECTURERS.

<i>Elementary Biology</i>	Mr. PARSONS.
<i>Chemistry, Chemical Physics, and Practical Chemistry</i>	Mr. DUNSTAN.
<i>Descriptive Anatomy</i>	Mr. PARSONS and Mr. ROBINSON.
<i>General Anatomy and Physiology</i>	Mr. LEATHES.
<i>Practical Physiology and Histology</i>	Mr. LEATHES.
<i>Midwifery</i>	Dr. TATE.
<i>Diseases of Women</i>	Dr. CULLINGWORTH.
<i>Practical and Manipulative Surgery</i>	Mr. BALLANCE and Mr. BATTLE.
<i>Medicine</i>	Dr. SHARKEY and Dr. HAWKINS.
<i>Surgery</i>	Mr. PITTS and Mr. ANDERSON.
<i>Pathology and Bacteriology</i>	Dr. TURNERY, Dr. PERKINS and Mr. SHATTOCK.
<i>Forensic Medicine and Toxicology</i>	Dr. COLMAN.
<i>Pharmacology and Therapeutics</i>	Dr. MACKENZIE.
<i>Diseases of the Eye</i>	Mr. LAWFORD.
<i>Mental Diseases</i>	Dr. RAYNER.
<i>Public Health and Sanitary Science</i>	Dr. SEATON.
<i>Clinical Surgery</i>	Sir WILLIAM MACCORMAC, Bart. (EMERITUS LECTURER).
<i>Clinical Medicine</i>	The PHYSICIANS.
" <i>Gynaecological</i>	Dr. CULLINGWORTH.
" <i>Surgery</i>	The SURGEONS.
" <i>Ophthalmic</i>	Mr. LAWFORD.
<i>Botany</i>	Mr. BENNETT
<i>Comparative Anatomy and Zoology</i>	Mr. PARSONS.

TEACHERS AND DEMONSTRATORS.

<i>Chemistry</i>	Dr. CROSSLEY and Mr. LE SUEUR.
<i>Physics</i>	Mr. LE SUEUR.
<i>Practical Pharmacy</i>	Mr. EDMUND WHITE.
<i>Practical Anatomy</i>	Mr. PARSONS, Mr. FISHER, and Dr. BOX.
<i>Physiology and Practical Physiology</i>	Mr. LEATHES, with Dr. SOMMERVILLE.
<i>Practical Medicine</i>	Dr. PERKINS and Dr. BOX, with Dr. SIKES.
<i>Practical and Manipulative Surgery</i>	The LECTURERS, with Mr. CORNER.
<i>Operative Surgery</i>	Mr. MAKINS, Mr. BATTLE, and Mr. BALLANCE.
<i>Practical Obstetrics</i>	DR. TATE.
<i>Electro-Therapeutics</i>	Dr. TURNERY.
<i>Morbid Anatomy</i>	Dr. PERKINS, Dr. COLMAN, and Dr. BOX.
<i>Morbid Histology and Bacteriology</i>	Dr. PERKINS.
<i>Diseases of the Eye</i>	Mr. FISHER.
" <i>Throat</i>	Mr. ROBINSON.
" <i>Skin</i>	Mr. ANDERSON.
" <i>Ear</i>	Mr. ABBOTT.
" <i>Teeth</i>	Mr. TRUMAN.
<i>Vaccination</i>	Dr. COPE.

SUGGESTIONS TO STUDENTS ABOUT TO ENTER THE MEDICAL PROFESSION.

Registration.*

The commencement of Medical Study cannot be registered at the Office of the General Medical Council until the Student has passed a Preliminary Examination in the subjects of General Education as specified in the following list :

- (1) English Language ; (2) Latin ; (3) Arithmetic, Algebra, and Euclid-- Books I., II., III. ; (4) Either Greek, or any Modern Language.

Preliminary Examinations.

A student who has not passed such an examination is recommended to pass either the Matriculation of the University of London, or the Professional Preliminary Examination of the College of Preceptors. The regulations respecting these may be obtained from the Registrar, University of London, South Kensington, S.W., and the Secretary, College of Preceptors, Bloomsbury Square, W.C.

Certificates of Graduation, Matriculation, and the Local Examinations of British and Colonial Universities are accepted by the General Medical Council provided that the above-mentioned subjects be shown to have been included at one and the same time.

London University.

Students who propose to obtain Medical Degrees in the University of London must pass both the Matriculation and the Preliminary Scientific Examinations before commencing their regular Medical Studies.

For the Preliminary Scientific Examination and the Intermediate Examination in Medicine special classes are held during the Winter and Summer Sessions (see p. 38).

For a Student who enters in October, intending to obtain the double qualification of the "Conjoint Board" (L.R.C.P. Lond. and M.R.C.S. Eng.), the following course of study is recommended. (For days and hours of Lectures, &c., see Time Table, p. 28.)

All Students are required to apply to the Medical Secretary for cards of Admission to the Lectures, attendance on which is in all cases registered.

First Winter Session.

Lectures, &c.

Anatomy, Elementary Biology, Elementary Physiology, Chemistry, Practical Chemistry, and Physics. Anatomical and Physiological Demonstrations. Dissections.

Examinations.

"Sessional" at Medical School in December and in March (see p. 33). Part III. (Elementary Biology)† of First Examination of the "Conjoint Board," in March.

First Summer Session.

Lectures, &c.

Chemistry, Practical Chemistry, Histology, Demonstrations in Practical Pharmacy; Practical Instruction in Pharmacy may be obtained from the Hospital Pharmacist. (Fee, three guineas for three months, p. 37.)

Examinations.

"Sessional," (see p. 33) and Parts I. (Chemistry and Physics)† and II. (Practical Pharmacy) of the "First Conjoint," in July.

* The Regulations of the General Medical Council with regard to Registration may be obtained from Messrs. Spottiswoode & Co., 54, Gracechurch Street, London, E.C.

† Students cannot present themselves for the "Second Conjoint" until the lapse of twelve months from the date of passing Biology and Chemistry.

Second Winter Session.

Anatomy and Physiology with Demonstrations and Dissections. Practical and Chemical Physiology. Tutorial Classes in Anatomy and Physiology.

"Sessional" in December and in March (see p. 33); "Tests," and "Second Conjoint" (Anatomy and Physiology) in March, or June.

Lectures

Examinations.

Second Summer Session.

Hospital Practice, Medical and Surgical.

Midwifery, Practical Surgery.

Lectures.

The course of instruction in Practical Medicine must be attended by Candidates for Out-Patient Clinical Clerkships, and the course of Elementary Practical Obstetrics by Candidates for Obstetric Clerkships.

Third Winter Session.

Hospital Practice, Medical and Surgical.

Medicine, Surgery, and Surgical Pathology, Practical Surgery, Lectures. Practical Course of Pathological Anatomy.

Clinical Clerkship (if not held during July, August, and September), and Dressership, in the Out-Patient Departments.

Maternity Cases may be attended at any time after the Lectures on Midwifery and a course of Practical Obstetrics by Students who have passed the "Second Conjoint."

Third Summer Session.

Hospital Practice, Medical and Surgical, with Clerkship or Dressership.

Practical Course of Pathological Anatomy (continued), including Practical instruction in Bacteriology, Forensic Medicine, Mental Disease, Therapeutics, Public Health, Midwifery, and Practical Surgery.

Lectures

Fourth Winter Session.

Hospital Practice, Medical, Surgical, the Special Departments, and Post-mortem Examinations. Clerkship or Dressership in special Departments and Post-mortem Room. Instruction in Vaccination (Fee, one guinea and a half, p. 37).

Practical Course of Pathological Anatomy (if not taken in third winter); Obstetric Demonstrations; Lectures on Diseases of Women, and on Diseases of the Eye. Clinical Lectures on Medicine and Surgery.

Lectures.

Fourth Summer Session.

Hospital Practice, Medical and Surgical, and Special Departments. Midwifery, Clinical Medicine, Clinical Surgery.

Lectures.

Fifth Year.

Hospital Practice, Medical and Surgical, and the Special Departments.

Tutorial Classes in Medicine, in Surgery (including operations upon the Dead Subject), and in Midwifery.

Attendance at a Fever Hospital and Clinical Demonstrations at a recognised Lunatic Asylum.

School Examinations in Medicine, Surgery, Midwifery, Pathology, Pharmacology, Forensic Medicine (including Insanity) and Public Health (see p. 33).

Examina-

tions.

Advanced Students are strongly advised to avail themselves of the opportunities afforded for Clinical Study of Fevers at the Hospitals of the Metropolitan Asylums Board, and of Mental Diseases at Bethlem Hospital in their fifth year.

Candidates for part III. of the Final Examination for the Diploma in Medicine and Surgery of the "Conjoint Board" are required to produce a certificate of attendance on not less than twenty labours. Students who have passed the "Second Conjoint," and have attended Lectures on Midwifery, and a Course of Elementary Practical Obstetrics, may enter their names for the Rota of Obstetric Clerks.

Examina-
tions.

No Student is admitted to part I. or II. of the Third Examination of the "Conjoint Board" until at least two years after passing the Second Examination, and five Winter and five Summer Sessions after Registration.

Preliminary Summer Session.

If a Student enters in May, intending to obtain the qualification of the Conjoint Board, he is advised to pursue the following course of study :—

Lectures.

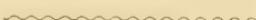
Elementary Biology, Lectures and Classes in Chemistry and Demonstrations in Practical Pharmacy.—Practical Instruction in Pharmacy may be obtained from the Hospital Pharmaceutist (Fee, three guineas for three months, p. 37).

Botany (if required for a higher examination).

Examina-
tions.

Part II. (Practical Pharmacy) of "First Conjoint" in July or October.

NOTE.—Students who join a Medical School in May have the advantage of an additional three months to devote to the preparation for the three parts of the First Examination of the "Conjoint Board," and of passing in Elementary Biology at Christmas.



All Students are required by the Governors to conform to the Regulations of the Hospital and Medical School, and the School Committee is empowered, with the approval of the Treasurer, to suspend or remove a Student at any time for adequate reason. (See also p. 36.)

During the fourth and fifth years, the greater part of the time can, and should, be given to the practical study of disease in the Wards, Out-Patient Departments, and Post-Mortem Room, but Students are reminded that such courses of lectures as relate to Final Examinations may be with advantage re-attended.

Students intending to prepare for University Degrees and other higher Examinations should apply to the Medical Secretary for information relating thereto. (For Special Classes for these Examinations see p. 38.)

Students when qualified should use every effort to obtain one of more of the senior appointments open to them, especially those of House Physician, House Surgeon, and Obstetric House Physician. These and other appointments, of which details are given at p. 31, afford opportunities for obtaining practical professional knowledge which cannot be estimated too highly. No payment is required for any of them.

N.B.—The Regulations for the Sessional Examinations and Prizes will be found on pp. 32-33.

TIMES OF ATTENDANCE OF THE PHYSICIANS AND
SURGEONS IN THE WARDS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
DR. SHARKEY	—	2	—	—	2	—
DR. ACLAND.....	2	—	—	2	—	—
DR. HAWKINS.....	2	—	—	2	—	—
DR. MACKENZIE	—	2	—	—	2	—
DR. CULLINGWORTH	—	2	—	—	2	—
MR. CLUTTON	—	2	—	—	2	—
MR. ANDERSON	2	—	—	2	—	—
MR. PITTS	—	2	—	—	2	—
MR. MAKINS	2	—	—	2	—	—
MR. LAWFORD	—	2	—	—	2	—
CLINICAL LECTURES { Medical	—	—	2	—	—	—
Surgical.....	—	—	9.30	—	—	—

TIMES OF ATTENDANCE OF THE ASSISTANT-PHYSICIANS
AND ASSISTANT-SURGEONS IN THE OUT-PATIENTS' ROOMS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
DR. TURNEY	—	1.30	—	—	1.30	—
DR. PERKINS	1.30	—	—	1.30	—	—
DR. COLMAN	—	—	1.30	—	—	1.30
MR. BATTLE	—	1.30	—	—	1.30	—
MR. BALLANCE	1.30	—	—	1.30	—	—
MR. ROBINSON	—	—	1.30	—	—	1.30

TIMES OF ATTENDANCE IN THE OUT-PATIENT SPECIAL
DEPARTMENTS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
MR. LAWFORD } (Diseases of { MR. FISHER } the Eye)	— 1.30	1.30 —	— 1.30	1.30 —	1.30 —	—
DR. TATE (Diseases of Women).....	—	—	1.30	—	—	1.30
DR. BOX (Diseases of Children) ...	—	—	10.30	—	—	—
MR. ROBINSON(Diseases of Throat)	--	—	—	1.30	—	—
MR. ANDERSON (Diseases of Skin).	—	—	—	—	1.30	—
MR. ABBOTT (Diseases of Ear)	1.30	—	—	—	—	—
DR. TURNEY (Electro-Therapeutics)	—	—	—	2	—	—
DR. BLACKER (X Ray).....	—	2	—	—	2	—
MR. TRUMAN (Diseases of Teeth)..	—	10	—	—	10	—
Dr. COPE (Vaccination)	—	—	11	—	—	—
DR. RAYNER (Mental Diseases) ...	—	—	—	10	—	—

DAYS AND HOURS FOR SURGICAL OPERATIONS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Surgical Operations.....	2.0	2.0	2.0	2.0	2.0	2.0
Gynaecological ,,	—	—	—	2.0	—	—
Eye ,,	—	—	—	2.0	—	—
Throat ,,	9.30	—	—	—	—	—
Ear ,,	—	—	—	9.30	—	—

DAYS OF ATTENDANCE OF THE ANÆSTHETISTS.

Departments.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Operating Theatre.	Mr. CLUTTON	Dr. Low	Mr. Tyrrell		A. H. S.	
	Mr. ANDERSON	Mr. Crouch	Dr. Morris	A. H. S.	Dr. Low	Mr. Tyrrell
	Mr. PITTS.....	A. H. S.		Mr. Crouch		Dr. Morris
	Mr. MAKINS...	A. H. S.				
GYNÆCOLOGICAL WARD				Dr. Morris		
EYE DEPARTMENT				Mr. Tyrrell		
EAR DEPARTMENT				Dr. Low		
THROAT DEPART- MENT	Mr. Crouch			9.30 a.m.		
DENTAL DEPART- MENT		Mr. Crouch				
		10 a.m.				

POST MORTEM EXAMINATIONS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Dr. PERKINS	—	—	2.0	—	—	2.0
Dr. COLMAN	2.0	—	—	2.0	—	—
Dr. BOX	—	2.0	—	—	2.0	—

HOSPITAL PRACTICE.

CLINICAL TEACHING OF MEDICINE AND SURGERY.

CLINICAL instruction is given daily by the Physicians and Surgeons during their visits to the Wards, and by the Assistant Physicians and Assistant Surgeons in the Out-Patient Departments (Time Table, p. 20). Clinical Lectures in Medicine and Surgery are given every Wednesday throughout the sessions at 2 p.m. and 9.30 a.m. respectively. A Special Course is also given by Sir W. MACCORMAC, Bart., K.C.V.O.

Diseases of Women.—Clinical instruction is given in Adelaide Ward on Tuesdays and Fridays at 2 p.m., and in the Out-Patient room on Wednesdays and Saturdays at 1.30 p.m.

Diseases of Children.—Instruction is given in the Out-Patient room on Wednesdays at 10.30 a.m. During the Winter Session Dr. Box will give a short course of lectures.

Midwifery.—A maternity department is connected with the hospital, women being attended in confinement at their own homes by students of the hospital, under the supervision of the Assistant Obstetric Physician (p. 32). Students are accompanied to their first five cases by one of the Obstetric House Physicians.

Diseases of the Eye.—Clinical teaching in the Out-Patient rooms daily except Saturday (Time Table p. 20). Clinical Lectures or Ophthalmoscopic Demonstrations weekly.

Diseases of the Skin.—Clinical instruction by Mr. ANDERSON on Fridays.

Diseases of the Throat.—Clinical instruction by Mr. ROBINSON on Thursdays. During the Winter Session a short course of Clinical Lectures is given to senior students.

Diseases of the Ear.—Clinical instruction by Mr. ABBOTT on Mondays. During the Winter Session Mr. ABBOTT gives a short course of Lectures to senior students.

Mental Diseases.—Clinical instruction by Dr. RAYNER on Thursdays.

Diseases of the Teeth.—Mr. TRUMAN and Assistant give instruction in Dental Surgery on Tuesdays and Fridays.

Vaccination is taught practically by Dr. COPE, who is authorised by the Local Government Board to give certificates of proficiency in Vaccination at St. Thomas's Hospital. Fee, One Guinea and a-half (see p. 37).

Electro-Therapeutics.—Instruction is given by Dr. TURNEY on Thursdays.

Physical Exercise.—Instruction is given by Mr. ABBOTT in the Department on Tuesdays and Fridays.

Anæsthetics.—The mode of Administration is taught practically by Mr. TYRRELL, Dr. MORRIS, Dr. LOW, and Mr. CROUCH.

LECTURES, CLASSES, & DEMONSTRATIONS.

*A complete list of Lecturers and Demonstrators, p. 16.
Time-table of days and hours of Lectures, &c., p. 28.
The attendance on all courses of Lectures is registered.*

ELEMENTARY BIOLOGY.

MR. PARSONS.

A six months' practical course to meet the requirements of the "Conjoint Board" is held from October to March, and a revision class from May to July.

Special classes, for the Preliminary Scientific, are commenced in October for the July examination of the University of London. (Fee, see p. 38.)

BOTANY.

MR. BENNETT, B.Sc.

A course of lectures on Systematic Botany is given during the Summer Session. It comprises the general principles of the classification of plants, with demonstrations of the characters of all the more important natural orders, especially those of medicinal value. The lectures are illustrated by diagrams and fresh specimens. (Fee, see p. 37.)

Special classes for the London University and other examinations commence in October. (Fee, see p. 38.)

COMPARATIVE ANATOMY.

MR. PARSONS.

A course of six lectures, especially intended for the primary examination for the Fellowship of the College of Surgeons, is given twice yearly. (Fee, see p. 37.)

CHEMISTRY AND CHEMICAL PHYSICS.

MR. DUNSTAN, F.R.S.

LECTURES on Chemistry and Chemical Physics are given three times weekly during the Winter Session, and on Chemistry during the Summer Session. These lectures are fully illustrated by experiments.

A course of Practical Work is commenced in January and is continued during the Summer Session.

These courses include the subject-matter of the various Examining Boards, and are specially arranged to afford the student an insight into the principles of chemical science and their application in Medicine.

A course of Chemical Demonstrations is given in connection with the Lectures on Toxicology and Forensic Medicine.

Special classes are held for students preparing for the Preliminary Scientific and Intermediate M.B. Examinations of the University of London, and for the Examinations of other Universities. (Fee, see p. 38.)

A special course of Practical Instruction is given in the Laboratory to Candidates for Diplomas in Public Health. (Fee, see p. 37.)

Arrangements may be made for additional Practical Work (Elementary and Advanced) in the Chemical Laboratory at fees which may be ascertained from the Medical Secretary.

ANATOMY.

MR. PARSONS AND MR. ROBINSON.

(a) ELEMENTARY.—A six months' course, consisting of two lectures and one oral examination weekly, is given for first-year students, dealing with osteology and attachments of muscles and ligaments.

(b) ADVANCED.—A six months' course, consisting of three lectures and one oral examination weekly, is given for second-year or more advanced students.

The lectures are illustrated by fresh dissections and preparations.

Classes, conducted partly by examination, partly by demonstration, are held during the latter half of the Winter Session, and deal with those sections of anatomy which cannot be included in the lecture course.

(c) PRACTICAL.—During both winter and summer sessions the dissecting room is open for the use of students, and the demonstrators attend daily. A number of stock preparations are displayed in the room, and the others are preserved for use in the tutorial classes.

Tutorial classes are held prior to the January, March and July examinations of the "Conjoint Board," which all candidates are allowed to attend. A verbal test examination is held three weeks prior to the examinations, at which candidates must satisfy the teachers as to their knowledge before obtaining the necessary signatures to their schedules.

Special classes in advanced anatomy are conducted by the lecturers and demonstrators for the various University and the Fellowship of the College of Surgeons examinations. (Fee, see pp. 37, 38.)

PHYSIOLOGY.

MR. LEATHES, M.B., B.Ch. OXON., F.R.C.S.

A systematic course of lectures is given throughout the Winter and Summer Sessions. As certain portions of the subject are dealt with more fully in some years than in others Students are required to attend the course both in the first and second years.

An elementary tutorial class for first year students is held twice a week during the first part of the Winter Session.

An elementary practical class for second year Students is held in the first half of the Winter Session. An elementary course of Chemical Physiology, also for second year Students, is given in the second half of the Winter Session.

A practical class in Histology is held three mornings a week during the Summer Session, and is attended by first year Students. Each Student is practically instructed in the methods of preparing histological specimens.

Each Student for the purposes of this class must provide himself with a microscope, slides and cover glasses, drawing-book and pencils, box to hold twelve dozen specimens, forceps, scalpel, scissors, section-lifter, mounted needles, and six watch glasses.

A table, cupboard and drawer, chemicals, staining and mounting fluids, &c., are provided for him. A deposit of 10s. is charged for the use of a key and apparatus, and this is repaid at the end of the course if both are returned in proper order.

Tutorial classes in Physiology are held by the Demonstrators prior to the January, April, and July examinations of the "Conjoint Board."

A *special class* in advanced practical Physiology is held twice a week from October to March and consists of two parts. The first half of the course is devoted to the use and study of those instruments and experiments which are fitted to class work. The second half is a course of advanced Chemical Physiology. During this class, demonstrations are given of many experiments which cannot be carried out by the Students themselves. This class is intended for those preparing for University Examinations (Cambridge, London, Oxford), or for the Fellowship of the College of Surgeons. For attendance in this class a special fee of six guineas is charged.

PHARMACY, PHARMACOLOGY, AND THERAPEUTICS.

DR. MACKENZIE.

Lectures are given three times a week during the Summer Session, the course being specially adapted to the requirements of candidates for the examination of the "Conjoint Board."

This course embraces the actions of the various medicinal agents on the healthy body, and on general morbid conditions.

Demonstrations are given in the *Materia Medica* Museum by Mr. White and two assistants.

PRACTICAL PHARMACY.—Instruction is given by the Hospital Pharmacist, Mr. E. White, B.Sc., to students requiring it. (Fee, see p. 37.)

Special classes are arranged to meet the requirements of—(a) the "Conjoint Board," (b) the intermediate M.B. of the University of London, (c) the first M.B. of Oxford and second M.B. of Cambridge.

MIDWIFERY AND DISEASES OF WOMEN.

DR. CULLINGWORTH AND DR. TATE.

A systematic course of lectures on Midwifery is delivered by Dr. Tate during the Summer Session, embracing the physiology and pathology of pregnancy, labour, and the puerperal state, preceded by an account of the anatomy and development of the female pelvis, and of the placenta and foetal membranes.

A short course of Obstetric demonstrations on the model is given by Dr. Tate during the Winter Session.

A course of about twenty Lectures (chiefly Clinical) on the Diseases of Women is delivered by Dr. Cullingworth during the Winter Session.

A class is held by the Obstetric tutor for practical instruction in the mechanism and management of labour and the use of instruments. No student is allowed to attend maternity cases until he has attended this class.

Tutorial Classes are held prior to the January, April, and July Examinations of the "Conjoint Board."

MEDICINE.

DR. SHARKEY AND DR. HAWKINS.

A systematic course of lectures on the Principles and Practice of Medicine is given three times weekly during the Winter Session.

Clinical lectures on Medicine are given once weekly throughout the Academic year, by the physicians to the Hospital in rotation. The subject of each is advertised beforehand in the Hospital and Medical School.

PRACTICAL MEDICINE.

DR. PERKINS AND DR. BOX.

An elementary course of practical instruction in the means of physical diagnosis is held for about a month prior to each quarterly appointment of out-patient clinical clerks; no student can be appointed until he has attended this class, or an equivalent course elsewhere. Instruction is given in the principles and method of examination of the circulatory, respiratory, urinary, digestive, and nervous systems. Tutorial Classes are held prior to the January, April, and July Examinations of the "Conjoint Board."

SURGERY.

MR. PITTS AND MR. ANDERSON.

A systematic course of lectures on General and Special Surgery is given three times weekly throughout the Winter Session. The subject, being too extensive for a six months' course, is completed in two Winter Sessions.

Clinical lectures on Surgery are given once weekly throughout the Academic year, by the surgeons to the Hospital in rotation. The subject chosen for each lecture is advertised beforehand in the Hospital and Medical School.

PRACTICAL SURGERY.

MR. BALLANCE AND MR. BATTLE.

During the Summer Session Mr. Battle holds a class once a week, providing special instruction for students about to apply for Out-patient dresserships. It comprises bandaging, the treatment of wounds the use of certain instruments and splints, and the demonstration of surgical landmarks on the living model. No student can be appointed a dresser until he has attended this class.

The Winter Course includes the diagnosis and treatment of fractures and dislocations, application of trusses and tourniquets, minor operations, treatment of haemorrhage and surgical emergencies, and the completion of the Summer Course on instruments and applied anatomy.

The teachers of practical surgery are assisted by Demonstrators, who supervise the students after each lecture in the various manipulations on the living models provided.

Tutorial classes are held for six weeks prior to the January, April, and July examinations of the "Conjoint Board." These include general surgery, operative surgery, and surgical anatomy, by the teachers and Demonstrator of Practical Surgery; and surgical pathology, by Mr. Shattock.

OPERATIVE SURGERY.

Classes are held by Mr. Ballance previous to the January, April, and July examinations of the "Conjoint Board." The operations are performed by the students, subjects being provided at the expense of the school.

Special classes are held at convenient times by Mr. Makins and Mr. Battle, for students preparing for the higher examinations. (Fee, see p. 37.)

PATHOLOGY, PATHOLOGICAL ANATOMY, AND BACTERIOLOGY.

DR. TURNEY, DR. PERKINS, AND MR. SHATTOCK.

A course of lectures on General Pathology, Surgical Pathology, and the diseases of special organs is given by Dr. Turney, Dr. Perkins, and Mr. Shattock throughout the Winter and Summer Sessions. Each lecture is followed by a demonstration, in which the main points are illustrated by microscopical and museum preparations. Illustrative sections for microscopical examination are given to each student for preparation and mounting.

Mr. Shattock's course of lectures deals with morbid growths, with the pathological questions touched upon in the systematic course of Surgery, and with Bacteriology; in the latter subject Students receive practical instruction.

The Demonstrator of Morbid Histology holds occasional classes, in which the microscopical preparations contained in the pathological cabinet are shown and explained.

Students are selected annually to assist the Demonstrator of Morbid Histology.

Post-mortem examinations are performed daily at 2 p.m. by Dr. Perkins, Dr. Colman, or Dr. Box, and demonstrations given. Students are appointed to act as clerks, and are required to make examinations under the supervision of the demonstrators.

ELEMENTARY PRACTICAL BACTERIOLOGY.

A short course is given during May and June by Mr. Shattock. (Fee, One Guinea, including materials.)

This course deals with the following subjects:—

1. Apparatus, and Preparation of Media.
2. The inoculation of various Media in Test tubes (Aerobic and Anaerobic).
3. The microscopic study of Bacteria by means of the Hanging Drop, and Dry Method.
4. The study and separation of Micro-Organisms by means of Plate-Cultures (Koch and Petri), of Roll- and Shake-Cultures.
5. The inoculation of Tubes from Plate- and Roll-Cultures, the making of Impression Preparations.
6. The staining of Micro-Organisms in sections by Gram's method and others; the Staining of Tubercular Sputum, of the Diphtheria Bacillus, Cholera Spirillum and other important Pathogenic forms.

N.B.—For the Diploma of Public Health this course is followed by a more detailed study of such Pathogenic organisms as those of Typhoid, Cholera, and Diphtheria; the examination of infected animals; and the Bacterial examination of water, air, and soil.

FORENSIC MEDICINE AND TOXICOLOGY.

DR. COLMAN.

Demonstrator of Toxicology—Dr. Crossley.

A three months' course of lectures is given during the Summer Session, by Dr. Colman.

The lectures cover the synopses of the various Examining Boards, and are supplemented in the toxicological section by demonstrations by Dr. Crossley.

MENTAL DISEASES.

DR. RAYNER.

A three months' course of lectures is given during the Summer Session, comprising Symptomatology, Causation, States and Forms of Disease.

1. Mental Defects—Idiocy, Imbecility, etc.
2. Mental disorders—*(a)* States of Mental Depression, Melancholia, etc.; *(b)* States of Mental Exaltation, Mania, etc.; *(c)* States of Stupor; *(d)* States of Chronic Disorder, and Dementia.
3. Mental disorder in relation to diseases, causes, etc.
(a) General paralysis, epilepsy, and other neuroses. *(b)* Insanities of puberty, adolescence, pregnancy, parturition and lactation; climacteric and senile insanities. *(c)* Insanities from injury, heat-stroke, fevers, etc. *(d)* Insanities from alcohol, lead, and other toxic agencies. *(e)* Insanity from gout, phthisis, and associated bodily diseases.

4. General Pathology.

Clinical Instruction is given by visits to Bethlem Hospital and other institutions for the Insane and Imbecile.

DISEASES OF THE EYE.

MR. LAWFORD AND MR. FISHER.

A course of about thirty lectures on the principal disorders and diseases of the Eye and its appendages is given during the Winter Session. Patients are frequently shown, or illustrative cases described. A lecture or demonstration of cases is given weekly during the Summer Session.

An elementary class for learning the use of the Ophthalmoscope is held in October, January, and May. Ophthalmoscopic cases are shown once a week during the Winter Session.

Oral classes and demonstrations are held in connection with the Surgical tutorial classes for the examinations of the "Conjoint Board."

A Special Course of operations on the dead subject is given by Mr. Fisher. (Fee, see p. 37.)

PUBLIC HEALTH.

DR. SEATON.

A course of lectures is given during the Summer Session, including:—

Water, Air, Soil, Food, the Dwelling—in relation to Health and Disease—Infectious and Epidemic Diseases, the principles of preventive measures—Quarantine Isolation—Hospitals, temporary or permanent—Provisions of the Act for Notification of Diseases—The principles of Disinfection and the mode of action of the chief disinfecting agents—Vaccination—Statistics in relation to public health—Statutes relating to public health—The powers and duties of Sanitary Authorities and their officers—Construction and Ventilation of Sewers, methods of sewage disposal and purification—Trades regulated under the Public Health Acts.

The lectures are usually supplemented by Public Health demonstrations, relating to water supply, systems of sewage disposal and purification, establishment and arrangement of Isolation Hospitals, house drainage, &c.

Special Classes for the Degree and Diploma in Public Health.—Dr. Seaton is prepared to receive applications, at the commencement of May, from gentlemen who are desirous of acquiring the special knowledge in the Sanitary organisation of large Towns and Counties which is required by Local Government and the various examining bodies.

Mr. Shattock and Dr. Jenner will give a course of Bacteriology, beginning in May, and Mr. Dunstan will give two courses of laboratory instruction in Physics, Chemistry and Microscopy, beginning, respectively, in October and January.

St. Thomas's Hospital Medical School is one of the institutions recognised by the Universities of Oxford and Cambridge and the Royal Colleges of Physicians and Surgeons for the course of laboratory instruction.

DAYS AND HOURS OF LECTURES AND DEMONSTRATIONS.
WINTER SESSION.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Years of Attendance
Elementary Biology, p. 22	—	12	—	12	—	—	1st Year.
Physics, Chemistry & Practical Chemistry p. 23	—	—	12	—	12	10.30	do
Descriptive and Surgical Anatomy, p. 23	— 9.30	9.30	— 9.30	9.30	— 9.30	11	do. 2nd Year.
Anatomical Demonstrations, p. 23	10 $\frac{1}{2}$ -4 $\frac{1}{2}$	10 $\frac{1}{2}$ -1	1st & 2nd.				
Physiology, p. 23	10.45	—	10.45	10.45	—	—	do.
Physiological Demonstrations, p. 24	Oct., Nov., Dec. Oct. to Mar.	— 10.45	—	—	9.30 10.45	—	1st Year. 2nd Year.
Practical Surgery p. 25, Oct., Nov., Dec.	—	—	9	—	—	—	3rd Year.
Comparative Anatomy (six lectures), p. 23	—	—	11	—	—	—	3rd Year.
Medicine, p. 25 { 2nd and 4th six weeks 1st and 3rd six weeks	— 12.30	4.30 —	— 12.30	4.30 4	4	—	} do.
Surgery, p. 25	9	—	—	9	—	9	do.
Bacteriology and Surgical Pathology, p. 26	—	—	—	12.30	12	—	do.
Diseases of Women p. 24, Oct., Nov., Dec.	—	9	—	—	9	—	3rd or 4th.
Pathological Anatomy (Practical), p. 26	—	—	—	—	—	11 $\frac{1}{2}$ -1 $\frac{1}{2}$	do.
Diseases of the Eye { Oct., Nov., Dec. p. 27..... { Jan., Feb., Mar.	4 4	— —	— —	—	5	—	do. do.
Obstetric Demonstrations (six), p. 24.....	—	—	4.30	—	—	—	do.

SUMMER SESSION.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Years
Botany, p. 22	—	10	10	—	—	—	1st Year.
Elementary Biology, p. 22	2	—	2	—	—	—	do.
Practical Pharmacy (Demonstrations), p. 24	—	3	—	2	—	—	do.
Chemistry and Practical Chemistry, p. 23	II-I	—	—	—	10-I	II-12 $\frac{1}{2}$	do.
Physiology, p. 23	Lecture Practical Class	— II-I	10 II-I	10 II-I	—	—	do. do
Anatomical Demonstrations, p. 23	II-4	II-4	II-4	II-4	II-4	II-I	2nd Year.
Midwifery, p. 24	—	9	9	9	9	—	do.
Comparative Anatomy (six lectures), p. 23	—	—	—	—	2	—	do.
Practical and Manipulative Surgery, p. 25	9	—	—	—	—	—	do.
Pathological Anatomy & Bacteriology, p. 26	12	—	12	—	—	—	3rd Year.
Do. Demonstration, p. 26	—	—	—	—	—	II	do.
Forensic Medicine, p. 26	4	12	—	4	—	9	do.
Mental Diseases, p. 26	—	—	—	12.30	—	—	do.
Public Health and Sanitary Science, p. 27	—	—	—	—	12	—	do.
Pharmacology and Therapeutics, p. 24	—	—	4.30	—	4.30	12	do.
Diseases of the Eye, p. 27	—	4.30	—	—	—	—	3rd or 4th.
Practical Bacteriology (six meetings), p. 26	—	—	—	12	—	—	do.

Clinical Lectures in Medicine and Surgery are given every Wednesday throughout the Sessions, at 2 p.m. and 9.30 a.m. respectively.

SCHOLARSHIPS, PRIZES, APPOINTMENTS, & HONORARY DISTINCTIONS.

OPEN SCHOLARSHIPS IN NATURAL SCIENCE.*

As an inducement to the study of Natural Science before the commencement of the strictly Medical Course, two Scholarships, of the value of £150 (*i.e.*, a free admission) and £60 respectively, are awarded annually, after an examination in Physics, Chemistry, and either Botany, Zoology or Physiology, at the option of Candidates. The Medical School Committee is empowered to grant an Exhibition of £20 to any *unsuccessful* competitor who obtains sufficient marks to qualify for a Scholarship.

These Scholarships are open to all Students not exceeding 24 years of age who have passed a recognised Preliminary Examination in Arts, and have not yet attended Lectures on Anatomy of the first year, without any condition as to their becoming Students of the Hospital, except in the case of successful Candidates, who must enter at once for the full curriculum. The Examination will be conducted by means of written papers and practical work, and will be held on the 26th, 27th, and 28th of September, 1900. The standard, so far as the subjects are the same, will be that of the Preliminary Scientific Examination for Honours of the University of London. Competitors are required to send in their names with choice of optional subject and Certificate of Birth and of Preliminary Examination to the Medical Secretary not later than September 19th.

UNIVERSITY SCHOLARSHIP.*

A Scholarship of the value of £50 will be offered for competition in the last week of September after an examination in *any two* of the following subjects : Anatomy, Physiology, Chemistry. It is open to Students who have completed their examinations in Anatomy, Physiology, and Materia Medica and Pharmacy for a Medical Degree in any of the Universities of the United Kingdom or the Colonies, and have not entered as Students in any London Medical School.

THE WILLIAM TITE SCHOLARSHIP.

This Scholarship, founded by the late Sir W. TITE, C.B., M.P., F.R.S., of the value of £27 10s., is awarded each year to the Student placed highest in the 1st Class List in the examinations at the end of the first Winter Session. Preference, in case of equality between Students, is to be given to the son of a medical man, and more particularly of one who has been educated at St. Thomas's Hospital or is in Practice in Bath.

THE MUSGROVE SCHOLARSHIP.

This Scholarship, founded by Sir JOHN MUSGROVE, Bart., the late President of the Hospital, of the value of £38 10s., is awarded biennially to the Student who shall take the highest place in the 1st Class List in the examinations at the end of the Second Winter Session. It is tenable for two years, provided the holder has worked during his third year to the satisfaction of the Medical School Committee.

THE PEACOCK SCHOLARSHIP.

This Scholarship, founded by the will of the late Dr. THOMAS BEVILL PEACOCK, for many years Physician, and at the time of his death Consulting Physician to St. Thomas's Hospital, is of the same value as the Musgrove Scholarship ; is awarded and held upon the same terms ; and is given every second year in alternation with that Scholarship.

THE BEANEY SCHOLARSHIP.

This Scholarship, founded by the will of the late Dr. BEANEY, of the value of £50, is awarded biennially, after an examination in Surgery and Surgical Pathology, to a student who shall have completed his fifth but not his seventh year. The examination is held during the Summer Session.

* The Examination Papers of last year may be had on application to the Medical Secretary.

THE SALTERS' COMPANY RESEARCH FELLOWSHIP.

This Fellowship of the annual value of £100 has been established and endowed by the Salters' Company, with a view to the promotion of research in Pharmacology. The Fellowship is awarded to a properly qualified person by the Company on the nomination of the Treasurer of St. Thomas's Hospital and a Committee of Selection. It may be held for a term of three years, the Fellow carrying on his researches at St. Thomas's Hospital and giving annual evidence of the performance of satisfactory work to the Committee of Selection. The Fellow is required to devote his whole time to research and to hold no other office or appointment except by special permission of the Salters' Company, granted on the strong recommendation of the Committee of Selection.

P R I Z E S.

The following Scholarships, Prizes, and Medals, will be offered for Competition during the year 1900-1901 :—

TWO OPEN SCHOLARSHIPS IN NATURAL SCIENCE of the value of £150 and £60 respectively, at the commencement of the 1st year.

THE UNIVERSITY SCHOLARSHIP of the value of £50, at the commencement of the 3rd year.

AT THE END OF FIRST YEAR.

<i>Winter.</i>	1st. ...	The William Tite Scholarship	...	...	£27 10s.
	2nd. ...	College Prize	...	...	£20.
	3rd. ...	Ditto	...	...	£10.
<i>Summer.</i>	1st. ...	College Prize	...	...	£15.
	2nd. ...	Ditto	...	...	£10.

SECOND YEAR.

<i>Winter.</i>	1st. ...	The Musgrove Scholarship	...	...	£38 10s.
	2nd. ...	College Prize	£20.
	3rd. ...	Ditto	£10.

THIRD YEAR.

Second Tenure of the Peacock Scholarship	£38 10s
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FIFTH YEAR.

Winter. An Examination will be held in the second half of the Fifth Winter Session, for which a Prize of £10 will be given in each subject.

Students of each year are classed according to their respective merits in the examinations, and those in the first class in each year receive Certificates of Honour, and a preference in the selection for Hospital Appointments.

Free Scholarships are given to distinguished Pupils of Merchant Taylors and City of London Schools, and Epsom College.

In addition there are awarded—

THE CHESELDEN MEDAL, *Annually.*

THE MEAD MEDAL, *do.*

THE SOLLY MEDAL AND PRIZE, *Biennially.* (1902.)

THE BEANEY SCHOLARSHIP, *do.* (1902.)

THE SUTTON SAMS MEMORIAL PRIZE, *Biennially* (1902.)

THE GRAINGER TESTIMONIAL PRIZE, *Annually.*

THE TREASURER'S GOLD MEDAL, *do.*

THE BRISTOWE MEDAL, *do.*

THE WAINWRIGHT PRIZE FOR MEDICINE, *do.*

THE HADDEN PRIZE FOR PATHOLOGY.

Intending Competitors, especially those who have spent a part of their curriculum elsewhere, should apply to the Medical Secretary for detailed regulations.

The CHESELDEN MEDAL, founded by the late GEORGE VAUGHAN, Esq., is annually awarded to the Fifth Year's Student who most distinguishes himself in respect of a Special Practical Examination in Surgery and Surgical Anatomy.

The MEAD MEDAL, founded by Mr. and Mrs. NEWMAN SMITH, is awarded annually to a Fifth Year's Student, in respect of a Special Practical Examination in Medicine, Pathology and Hygiene.

The WAINWRIGHT PRIZE, £10, is awarded annually to a University Student under certain conditions after an Examination in Medicine, Pathology and Hygiene.

The SOLLY MEDAL, together with a Prize in Money, will be awarded biennially. Those Students are eligible to compete who shall be of from three to six years' standing. The award is made for the best series of Reports of Surgical cases coming under the Student's personal observation in the Wards, not, however, to exceed ten in number.

The BRISTOWE MEDAL will be awarded annually in respect of a special Practical Examination in Pathology and Morbid Anatomy.

The GRAINGER TESTIMONIAL PRIZE, of the value of Fifteen Pounds, is awarded annually for work in Anatomy and Physiology. The conditions of competition for this Prize have recently been altered, and can be learnt from the Medical Secretary.

The SUTTON SAMS MEMORIAL PRIZE, awarded biennially for the best series of Reports of Cases in Obstetric Medicine, including Midwifery and the Diseases of Women.

The TREASURER'S GOLD MEDAL for General Proficiency and Good Conduct, is awarded at the end of the 5th Winter Session to the Student who has passed through his pupilage in St. Thomas's Hospital in the most meritorious manner (printed regulations are posted in the Library).

APPOINTMENTS.*

A RESIDENT ASSISTANT PHYSICIAN and a RESIDENT ASSISTANT SURGEON, at a salary of £100 per annum each, are from time to time appointed. The appointments are annual, but the tenure of office may be renewed for a term not exceeding two years.

TWO HOSPITAL REGISTRARS, at an annual Salary of £100 each, are appointed in each year. They are eligible for annual re-appointment, but may not hold office for more than two years. Preference will be given to Gentlemen who have been distinguished for merit, and have completed their studies in the School. The payment of the Registrars is subject to the presentation of a Report upon the Practice of the Hospital, and to such Report being regarded as satisfactory by the Medical Officers to whom it shall have been referred.

AN OBSTETRIC TUTOR AND REGISTRAR is appointed each year, at an annual salary of £50. He is eligible for annual re-appointment, but may not hold office for more than three years consecutively. The holder of the office takes part in the tutorial instruction of students, under the direction of the Obstetric Physician.

AN ASSISTANT TO THE SUPERINTENDENT OF THE CLINICAL LABORATORY is appointed from time to time.

House Appointments, open to Students who have obtained their diplomas.
(The duties of these offices commence on the first Tuesday in March, June, September, and December.)

Four HOUSE PHYSICIANS, Two ASSISTANT HOUSE PHYSICIANS, Four HOUSE SURGEONS, and Four ASSISTANT HOUSE SURGEONS, are selected every three months. The Assistant House Physicians and Surgeons are non-resident, but the other Officers are provided with Rooms and Commons in the Hospital, free of expense, and hold office for six months, if recommended for re-election.

* All these Appointments are open to Students without extra payment.

A SENIOR and a JUNIOR OBSTETRIC HOUSE PHYSICIAN are selected every three months. The former is provided with Rooms and Commons in the Hospital, free of expense. The latter is provided with Commons, and must live near the Hospital.

TWO OPHTHALMIC HOUSE SURGEONS, Senior and Junior, are appointed for six months; each receives a Salary at the rate of £50 per annum, and the Senior is provided with Commons. They must live near the Hospital.

CLINICAL ASSISTANTS in the Departments for Diseases of the Throat, Skin, and Ear, and in the Electrical, X Ray, and Physical Exercise Departments, are appointed every three months.

In the Special Departments preference is given to those who have worked in a satisfactory manner therein as Clinical Clerks and Dressers.

Appointments for Un-qualified Students.

CLINICAL CLERKS and DRESSERS to In-patients are selected to the number of at least 100 each year, from amongst the most eligible pupils. The DRESSER on Accident Duty is provided with a Room and Commons in the Hospital. CLINICAL CLERKS and DRESSERS for the Out-patients are also appointed, to the number of at least 80 to 100 each year; applicants are required to have passed the 2nd examination of the Conjoint Board, or an equivalent examination, and to have attended a course of instruction in Elementary Clinical Medicine (p. 25). (*The Duties commence on the first Tuesday in January, April, July, and October.*)

OBSTETRIC CLERKS are appointed, in rotation, from a list of Students who have entered their names for the purpose, have attended Lectures on Midwifery and a course of Elementary Practical Obstetrics, and have passed the "Second Conjoint," or an equivalent Examination. Each Clerk holds office for three weeks, and Special Certificates are awarded to those Gentlemen who have satisfactorily attended Sixty Maternity cases. An allowance is made towards the cost of board and lodging.

ASSISTANTS TO THE TEACHERS OF PRACTICAL AND MANIPULATIVE SURGERY are appointed for the Winter and Summer Sessions.

ASSISTANTS TO THE LECTURER ON MATERIA MEDICA are appointed for the Summer Session.

Students are appointed to act as ASSISTANTS in the CLINICAL LABORATORY and to the DEMONSTRATORS of MORBID HISTOLOGY and of MORBID ANATOMY.

ASSISTANTS IN THE CHEMICAL DEPARTMENT are selected from those who have passed the PREL. SCI. UNIV. LOND. or who are similarly qualified.

ASSISTANTS IN THE PHYSIOLOGICAL LABORATORY are selected from Students who have completed their Second Winter Session.

ANATOMICAL REGISTRARS and PROSECTORs are appointed in the early part of the Winter Session, also ASSISTANTS TO THE LECTURER ON ELEMENTARY BIOLOGY.

REGULATIONS FOR THE EXAMINATION AND CLASSIFICATION OF THE STUDENTS AT THE MEDICAL SCHOOL.

1. In accordance with the Regulations of the Qualifying Bodies, Students must attend the Class Examinations in the subjects for which they have to be certified, and show by their answers to the questions that they have paid proper attention to the Lectures, otherwise the signature to their Schedules may be withheld.

2. There shall be held at least two Examinations in the 1st and 2nd Winter and one in the 1st Summer Session in each subject on which attendance is required during that Session, and the marks obtained in these Examinations shall be the basis for the Classification of Students and the Award of Prizes for each Session respectively. Provided that any extra Examination in the course of the Session, in any subject, be not allowed to interfere with the ordinary Lectures in other subjects.

3. The number of marks allotted to each subject in the following Schedule is not to be exceeded in case the number of Examinations held during the Session be more than two, but must be distributed amongst the several Examinations.

4. Students must obtain at least one-third of the total number of marks in each subject, and not less than two-thirds of the total number allotted to all the subjects collectively, to be placed in the 1st Class.

Those who have obtained one-third of the total number of marks allotted to all the subjects collectively are placed in the 2nd Class.

The names of those who do not obtain either a 1st or 2nd Class position are not published, but a General List showing the exact position of each Student at every Examination is kept by the Secretary, from whom any Student can learn his own position, but no Lecturer shall make known to Students the number of marks obtained by any Student in any subject.

5. The Prizes shall be awarded to the Students holding the 1st, 2nd, and 3rd positions in the 1st Class of each Winter Session, and to those holding the 1st and 2nd positions of the 1st Class in the first Summer Session.

6. The number of marks allotted to the Examinations for the MEAD and CHESELDEN Medals shall be 600 each.

7. In awarding the TREASURER'S Medal the number of marks obtained at the Sessional Examinations and in the MEAD and CHESELDEN Examinations shall be counted, provided that, as regards the Examination for the Medals, two-thirds of the maximum marks be obtained, but those obtained in the Entrance Scholarship Competition shall not be included.

8. The Authorities reserve the right of withholding any prize, if no competitor of sufficient merit present himself.

9. Attendance and satisfactory performance at the Fifth Year's Examination is compulsory upon all Students who desire to hold a House Appointment, or an appointment as Clinical Assistant in a Special Department.

1st YEAR'S SUBJECTS.

WINTER ... Anatomy	... ... ...	500
Practical Anatomy	... ...	300
Physiology	... ...	300
Elementary Biology	... ...	300
Chemistry and Practical Chemistry	... ...	600
Total	... ...	<u>2000</u>

SUMMER ... Chemistry and Practical Chemistry

Chemistry	... ...	300
Practical Pharmacy	... ...	200
Practical Physiology	... ...	200
Total	... ...	<u>800</u>

2nd YEAR'S SUBJECTS.

WINTER ... Anatomy	... ... ...	500
Practical Anatomy	... ...	300
Physiology	... ...	600
Practical Physiology	... ...	200
Total	... ...	<u>1600</u>

5th YEAR'S SUBJECTS.

Medicine.

Surgery (including Ophthalmology).

Midwifery and Diseases of Women.

Pathology.

Pharmacology and Therapeutics.

Forensic Medicine (including Insanity).

Public Health.

Every Student must take up at least three subjects, one of which must be either Medicine or Surgery.

Distribution of Prizes for the Past Sessions.

SUMMER SESSION, 1899.

FIRST YEAR'S STUDENTS.

F. W. W. SMITH, Newington Causeway	... ...	{ College Prize, £15, and Certificate of Honour.
C. M. ROBERTS, Ravenhurst Park	... ...	{ College Prize, £10, and Certificate of Honour.

SECOND YEAR'S STUDENT.

C. U. IND, Margate	... ...	{ College Prize, £15, and Certificate of Honour.
H. W. SEXTON, Hackney	... ...	{ College Prize, £10, and Certificate of Honour.

WINTER SESSION, 1899-1900.
ENTRANCE SCIENCE SCHOLARSHIPS.

L. BATHURST, <i>Penge</i>	...	...	...	First Scholarship, £150, and Certificate of Honour.
L. CRASKE, <i>Battersea Park</i>	...	...	...	Scholarship, £60, and Certificate of Honour.

UNIVERSITY SCHOLARSHIP.

A. C. HUDSON, <i>Rugby</i>	Scholarship, £50, and Certificate of Honour.
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FIRST YEAR'S STUDENTS.

K. TAKAKI, <i>Tokio</i>	The Wm. Tite Scholarship, £27 10s., and Certificate of Honour.
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SECOND YEAR'S STUDENTS.

<i>eq.</i>	H. S. BENNETT, <i>Felixstowe</i>	The Peacock Scholarship, £38 10s., and Certificate of Honour.
	F. W. W. SMITH, <i>Newington Causeway</i>	...	...	College Prize, £20, and Certificate of Honour.

THIRD YEAR'S STUDENTS.

C. U. IND, <i>Margate</i>	Second tenure of Musgrove Scholarship, and Certificate of Honour.
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FIFTH YEAR'S STUDENTS.

F. C. EVE, <i>Bedford</i>	College Prize, £10 (Medicine).
W. H. O. WOODS, <i>Gillingham</i>	College Prize, £10 (Surgery).
T. S. TAYLOR, <i>Leeds</i>	...	...	...	College Prize, £10 (Midwifery).
J. E. H. SAWYER, <i>Warwick</i>	...	...	...	Hadden Prize, £10 (Pathology).
J. L. LOCK, <i>Cambridge</i>	...	...	...	College Prize, £10 (Pharmacology).
R. B. KINLOCH, <i>Cardiff</i>	...	...	...	College Prize, £10 (Forensic Medicine and Insanity).
W. B. FRY, <i>Streatham Hill</i>	...	...	...	College Prize, £10 (Public Health).

PRACTICAL MEDICINE.

R. B. KINLOCH, <i>Cardiff</i>	...	...	...	The Mead Medal, founded by Mr. and Mrs. NEWMAN SMITH.
F. C. EVE, <i>Bedford</i>	...	...	...	Certificate of Honour.

SURGERY AND SURGICAL ANATOMY.

T. H. EDWARDS, <i>Kew</i>	The Cheseiden Medal, founded by the late GEORGE VAUGHAN, Esq.
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PATHOLOGY AND MORBID ANATOMY.

C. L. HAWKINS, <i>Downham Market</i>	The Bristowe Medal.
A. E. MARTIN, <i>Bristol</i>	...	...	...	Certificate of Honour.
L. S. DUDGEON, <i>North Kensington</i>	Certificate of Honour.

GRAINGER TESTIMONIAL PRIZE.

F. C. EVE, <i>Bedford</i>	Prize, £15.
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FOR REPORTS OF SURGICAL CASES.

J. E. H. SAWYER, <i>Warwick</i>	The Solly Medal and Prize.
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FOR GENERAL PROFICIENCY AND GOOD CONDUCT.

F. B. SKERRETT, <i>Newcastle (Staffs)</i>	The Treasurer's Gold Medal.
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CERTIFICATES OF HONOUR.

HOUSE PHYSICIANS.

E. H. ROSS	F. H. ELLIS
H. C. THORP	B. F. HOWLETT
A. H. GREG	...	...	H. R. BEALE
A. BEVAN	...	...	L. S. DUDGEON

ASSISTANT HOUSE PHYSICIANS.

F. H. ELLIS	...	...	L. S. DUDGEON
B. F. HOWLETT	...	...	E. W. HEDLEY
H. R. BEALE	...	...	F. C. EVE

HOUSE SURGEONS.

H. J. PHILLIPS	H. T. D. ACLAND	E. C. BOURDAS
P. W. G. SARGENT	A. WEBB-JONES	N. UNSWORTH
S. A. LUCAS	E. A. GATES	

ASSISTANT HOUSE SURGEONS.

A. WEBB-JONES	N. UNSWORTH	J. F. CUNNINGHAM
E. A. GATES	A. E. MARTIN	Y. TAKAKI
E. C. BOURDAS	C. L. HAWKINS	

OBSTETRIC HOUSE PHYSICIANS.

<i>Senior</i> —S. H. BELFRAGE	<i>Junior</i> —H. M. SCAPING
H. M. SCAPING	A. E. STEVENS
G. B. THWAITES.	H. H. R. CLARKE
H. H. R. CLARKE	A. BEVAN.

OPHTHALMIC HOUSE SURGEON.

J. E. KILVERT

CLINICAL ASSISTANTS IN THE SPECIAL DEPARTMENTS.

Throat	Skin	Ear
E. C. BOURDAS	H. R. BEALE	A. WEBB-JONES
L. H. LINDLEY	T. PERRIN	

CERTIFICATES OF PROFICIENCY.

ANATOMICAL REGISTRARS.

J. E. ADAMS		T. JAYS
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PROSECTORS.

G. C. ADENEY		C. M. ROBERTS
C. H. LATHAM		F. R. E. WRIGHT

ASSISTANTS IN THE PHYSIOLOGICAL LABORATORY.

J. E. ADAMS	|	O. MILLS
T. JAYS	|	W. M. STRONG

ASSISTANTS IN THE PATHOLOGICAL LABORATORY.

C. W. DAVIES	|	S. HUNT	|	G. A. C. SHIPMAN
A. S. GRIMWADE	|	Z. MENNELL	|	A. T. WATERHOUSE
C. T. HOLFORD				

ASSISTANTS IN THE BIOLOGICAL LABORATORY.

L. BATHURST		L. CRASKE		E. W. PARRY
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ASSISTANTS IN THE CHEMICAL LABORATORY.

F. B. DALGLIESH		T. P. PUDDICOME
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ASSISTANT IN THE PHYSICS LABORATORY.

L. BATHURST.

ASSISTANTS TO THE LECTURER ON MATERIA MEDICA.

C. U. IND		T. D. MILLER
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ASSISTANTS TO THE TEACHERS OF PRACTICAL SURGERY.

H. R. BATEMAN		J. F. CUNNINGHAM		J. L. LOCK
H. H. R. CLARKE		W. M. GLANVILLE		C. A. R. NITCH

The following Distinctions in the University of London have been obtained by Students of St. Thomas's Hospital during the past year:—

HONOURS EXAMINATIONS—UNIVERSITY OF LONDON.

First Class in Zoology, and Third Class in Botany (Inter. Sci. and Prelim. Sci.),
H. M. WOODCOCK.

First Class in Physiology (B.Sc.), A. W. SIKES.

First Class in Organic Chemistry, and Third Class in Physiology (Inter. M.B.),
W. H. HARWOOD-YARRED.

Second Class in Forensic Medicine (M.B.), R. G. STRANGE.

FEES FOR ATTENDANCE ON THE LECTURES
AND ON THE
PRACTICE OF THE HOSPITAL.

COMPOSITION FEES.

The Composition Fee to Hospital Practice and Lectures may be paid in the following ways:

- 1st. One Hundred and Fifty Pounds on entrance in one sum;
- 2nd. One Hundred and Fifty-seven Pounds Ten Shillings in instalments;

- (a) By two payments, £85 on entrance, and £72 10s. at the beginning of the second year;
- (b) By three payments, £75 at the beginning of the first year, £50 at the beginning of the second year, and £32 10s. at the beginning of the third year;
- (c) By four payments, £65 at the beginning of the first year, £50 at the beginning of the second year, £30 at the beginning of the third year, and £12 10s. at the beginning of the fourth year.

A reduction is made in the case of Students who have passed in Chemistry and Physics or Elementary Biology before entering the Hospital.

Students entering at St. Thomas's for Lectures and Hospital Practice of the second and subsequent years pay £130 on entrance, or three instalments of £52 10s., £42, and £42. Students entering for Lectures and Hospital Practice of third and subsequent years pay a composition fee of £80, or £52 10s. on entrance, and £31 10s. one year subsequently.

[N.B.—It should be understood that although the Composition Fees are intended to cover unlimited attendance on Lectures and Hospital Practice, yet if a student fail to pass the several professional examinations within periods deemed reasonable by the School authorities, he may be required to pay additional fees for attendance at practical Courses and Tutorial Classes, or his rights as a Student may be suspended or determined at any time by the School Committee, with the approval of the Treasurer.]

Legally qualified Medical Men (British, Colonial, or Foreign), are admitted to the Hospital practice, Clinical Lectures, and Museums of the following Hospitals: Charing Cross, Guy's, King's College, Middlesex, St. George's, St. Mary's, St. Thomas's, University College, and Westminster.

Cards are issued at the following rates: For 3 months, 7 guineas; for 6 months, 10 guineas; and for any longer period at the further rate of 5 guineas for each additional 6 months.

The cards do not entitle the holder to certificates of attendance either on Lectures or in Hospital Practice for the purpose of any examination.

The Fee for attendance on the general subjects required of Students in Dental Surgery, is for the two years, £65, or by instalments, £55 for the first year, and £15 for the second year. If certificates for *Dental* practice are also required, the special fee for that subject (see below) has to be paid.

The undermentioned Courses may be attended separately on the following terms, which entitle to Certificates for such Attendances.

For the Medical and Surgical Practice, including Clinical Lectures and the Special Departments.

Three months	£21.	Twelve months... ..	£36 15s.
Six months	£26 5s.	Unlimited	£73 10s.

The Practice of either the Medical or Surgical Wards, or any one of the Special Departments, may be attended separately.

	Medical or Surgical.	Each Special Department.
Three months	£15 15s.	£5 5s.
Six months	£21.	£10 10s.
Twelve months	£26 5s.	£15 15s.

Lectures and Demonstrations.

Anatomy, Physiology	each	£10 10s.
Practical Anatomy (twelve months), Practical Physiology, including Histology	each	£10 10s.
Medicine, Surgery, Chemistry	,,	£7 7s.
Midwifery ... ..	..	£6 6s.
Pharmacology and Therapeutics, Physics, Forensic Medicine each		£5 5s.
Pathology, including Pathological Histology and Bacteriology...		£8 8s.
Diseases of Women, Public Health, Insanity, Diseases of the Eye	each	£3 3s.
Practical Medicine, Practical Obstetrics, Laryngology	,,	£3 3s.
Practical Surgery, Practical Chemistry, Elementary Biology ..	,,	£6 6s.
Demonstrations in Post-Mortem room (twelve months) ... ..	..	£10 10s.

NOTE.—A small charge for materials is made for all Practical Courses taken separately.

SPECIAL COURSES (not included in the Composition Fee) and EXTRA EXPENSES.

Comparative Anatomy ... ..	..	..	..	..	..	..	..	£2 2s.
Botany ... ..	..	..	..	..	..	..	..	£3 3s.
Operative Surgery ... ..	..	..	..	..	..	..	..	£5 5s.
Ditto of Eye ... ..	..	..	..	..	..	..	..	£2 2s.
Advanced Anatomy, Advanced Physiology ... ..	..	..	..	..	..	..	each	£6 6s.
Public Health—Six months' Laboratory Instruction for the Diploma ... ..	..	..	..	..	..	..	..	£21.
Practical Bacteriology ... ..	..	..	..	..	..	..	..	£1 1s.
Vaccination ... ..	..	..	..	..	..	..	..	£1 11s. 6d.
Practical Instruction in Pharmacy ... ..	..	..	..	..	..	..	..	£3 3s.
Attendance at a Fever Hospital of the Metropolitan Asylums Board ... ..	..	..	..	..	..	..	..	£3 3s.
Attendance at a recognised Lunatic Asylum ... ..	..	..	..	..	..	..	..	£3 3s.

Students who pay a Composition Fee are now supplied with chemicals and materials for **one course** of Practical Chemistry, Practical Physiology, and Elementary Biology without extra charge, but there are certain instruments and materials required during the course of study, as follows, viz. :

Those attending Elementary Biology, Practical Physiology and Physiological Demonstrations must provide themselves with Microscopes. Dissecting Instruments are required for the Elementary Biology Course.

Students Dissecting pay for the "parts" they dissect at fixed rates, which are notified in the Library.

Each Clinical Clerk must provide himself with a Stethoscope and Registering Clinical Thermometer. Each Dresser is required to have a Registering Clinical Thermometer, a Pocket Case of Instruments, and a Case of Silver or Plated Catheters.

UNIVERSITY OF LONDON.

Preliminary Scientific and Intermediate M.B. Classes.

PRELIMINARY SCIENTIFIC EXAMINATION.

Special instruction in the subjects required for this Examination is given
in the form of (*a*) Lectures and (*b*) Classes, from October to July.

		Mon.	Tues.	Wed.	Thur.	Fri.	Sat.
Botany.	A. W. BENNETT, M.A.	{ Lectures (Summer) Classes (Winter & Summer)	—	10.0	10.0	—	—
Chemistry.	W. R. DUNSTAN, M.A., F.R.S.	{ Lectures (Winter) Classes (Summer) Practical (Winter) ,, (Summer)	—	—	12.0	—	12.0
Physics.	H. R. LE ^E SUEUR, B.Sc.	{ Lectures and Practical Work	—	—	12.0	—	—
Zoology.	F.G. PARSONS, F.R.C.S.	{ Classes (Winter) ,, (Summer)	2.0 9.30	—	9.30 9.0	—	—
					9.0	9.0	—
					& 2.0		—
					10.30	—	—
					10.30	—	—
					Laboratory open daily	10.30	Oct. Nov. Dec.

N.B.—A Microscope and simple Dissecting Apparatus must be provided by each Member of the Class, and Two Guineas are charged for materials.

Fee, inclusive of Practical Chemistry Sixteen Guineas.

Fee for any single subject Five Guineas.

Subsequent Courses, half Fee, if recommended by the respective Teachers.

In the Practical Classes of Botany and Zoology, each Student has the opportunity of dissecting the chief types.

INTERMEDIATE EXAMINATION IN MEDICINE.

		Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Anatomy.	F. G. PARSONS, F.R.C.S., and H. B. ROBINSON, M.S.	{ Jan. to Mar. May to July	—	9.30 Four times a week.	9.30	—	—
Physiology & Histology	J. B. LEATHES, M.B., B.Ch. Oxon., F.R.C.S.	{ Oct. to Mar. May to July	2—4	— —	2—4 —	—	—
Organic Chemistry.*	W. R. DUNSTAN, M.A., F.R.S.	{ Jan. to Mar. May to July	12.0	2.0 Practical work	2.0	2.0 Revision Class	—
Materia Medica and Pharm. Chemistry.	E. WHITE, B.Sc.	{ May to July	—	2.0 Practical work	2.0 Practical work	2.0 Revision Class	—

Fee to Students of the Hospital, inclusive of

Organic Analysis and Chemicals Nine Guineas.

To others ditto Twelve Guineas.

Subsequent Courses, half Fee, if recommended by the respective Teachers.

* Students are strongly advised to attend the lectures in this subject immediately they have passed the Preliminary Scientific Examination, and the lectures, revision classes and practical work in the next year.

NOTE.—Private Classes are held for the Final M.B. Examination.

St. Thomas's Hospital.

MEDICAL AND PHYSICAL SOCIETY.

President, 1900—1901.
MR. H. B. ROBINSON.

Vice-Presidents.

DR. ACLAND.
MR. ANDERSON.
MR. BATTLE.

DR. CULLINGWORTH.
MR. LAWFORD.
DR. MACKENZIE.

MR. ROBINSON.
MR. SHATTOCK.
DR. TURNEY.

Treasurer.—MR. G. S. SAUNDERS.

Hon. Secretaries.

MR. G. A. C. SHIPMAN. MR. A. MAVROGORDATO.

Committee.

MR. C. L. HAWKINS.
MR. F. C. EVE.
MR. C. F. SELOUS.
MR. H. S. STANNUS.

MR. J. J. ARMITAGE.
MR. H. J. DE BRENT.
MR. A. MAVROGORDATO.

MR. G. A. C. SHIPMAN.
MR. A. C. HUDSON.
MR. H. UPCOTT.

This Society was originated in the early part of the present century by students of the Hospital, and has for its object the reading and discussion of papers on Medicine, Surgery, and subjects of General Interest, the narration of cases, and the exhibition of specimens of Physiological and Pathological interest. The Meetings are held in the Students' Club on alternate Thursdays at 8.30 p.m., and terminate not later than 10 p.m.

Further information can be obtained of the Hon. Secretaries.

ST. THOMAS'S HOSPITAL REPORTS.

VOL. XXVIII., NEW SERIES,

EDITED BY

H. W. G. MACKENZIE, M.A., M.D., Cantab, and
G. H. MAKINS, F.R.C.S.

Will be Published in due Course.

It will contain contributions from Members of the Staff and others, together with the Statistical Reports of the Hospital, by the Medical and Surgical Registrars, to December 31st, 1899. A General Index to Vols. I. to XXV. appears in Vol. XXVI.

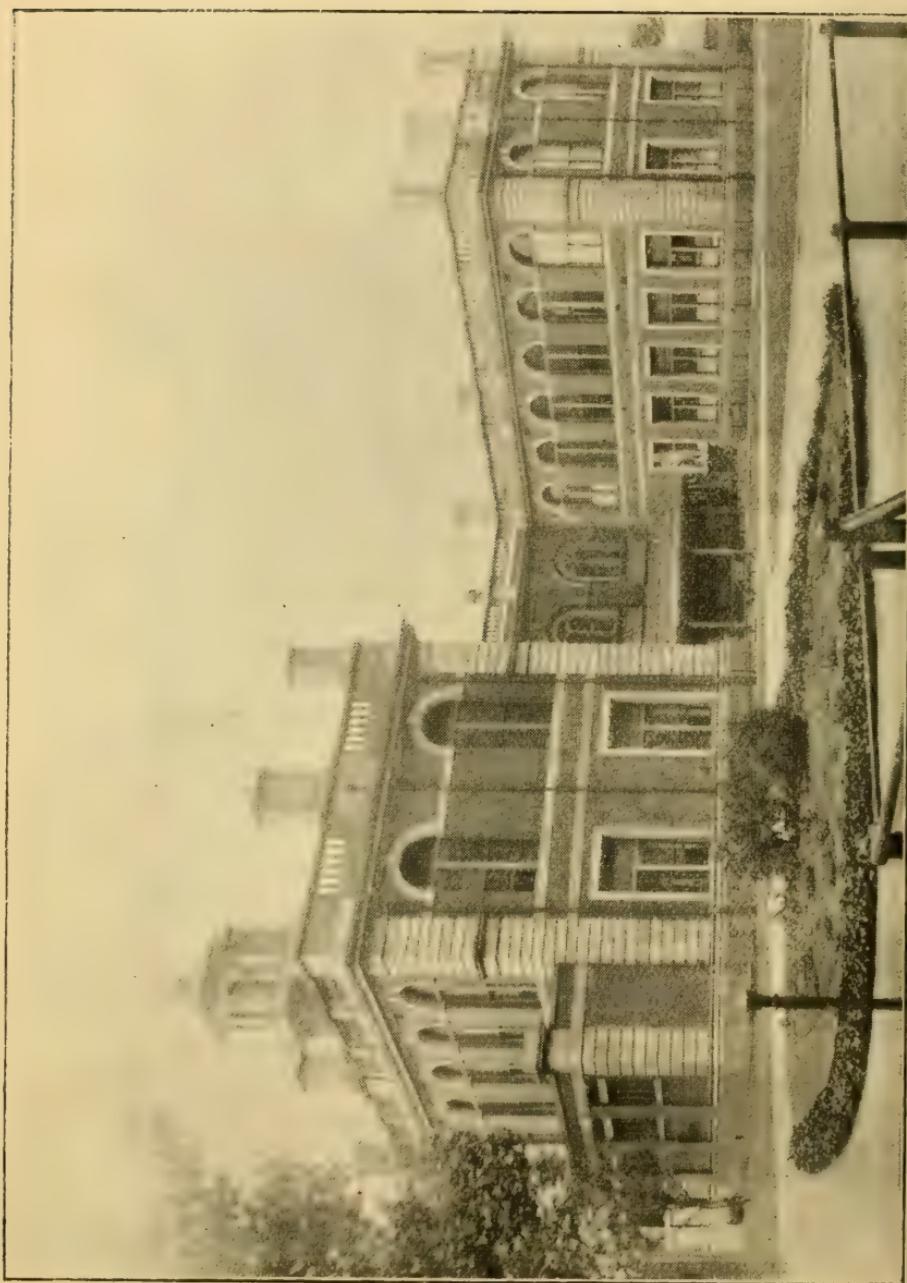
The New Series commenced in 1870, and complete Sets may still be had.

Intending Subscribers are requested to communicate with MR. G. RENDLE, the Secretary of the Medical School, at the Hospital, to whom P.O. Orders on the Westminster Bridge Office are to be made payable.

PRICE OF THE VOLUME (including Postage or delivery) :—

To Subscribers in Great Britain and Countries within the Postal Union	... 6s. od.
To Non Subscribers	do. do. ... 8s. 6d.

MEDICAL SCHOOL, NORTH VIEW.



OCTOBER, 1900.

1	M	Last day for Entry Univ. Lond. M.B. Exam.
2	TU	Distribution of Prizes, 3 p.m. Annual Dinner. Clinical Clerks and Dressers commence duty.
3	W	
4	TH	
5	F	Meeting of Library Committee.
6	S	
7	S	Seventeenth Sunday after Trinity.
8	M	
9	TU	
10	W	
11	TH	
12	F	
13	S	
14	S	Eighteenth Sunday after Trinity.
15	M	
16	TU	
17	W	
18	TH	St. Luke.
19	F	
20	S	
21	S	Nineteenth Sunday after Trinity.
22	M	Univ. Lond. B.Sc. Exam.
23	TU	
24	W	
25	TH	
26	F	
27	S	
28	S	Twentieth Sunday after Trinity. St. Simon and St. Jude.
29	M	Univ. Lond. M.B. Exam.
30	TU	
31	W	

The Registration and Museum Committees meet during this month.

The Primary Examination of the Society of Apothecaries is held Quarterly, in the months of October, January, April, and July. The Final is held monthly; the Surgical part commences on the second Wednesday, and the Medical on the Monday following.

First, Second, and Third Examinations of the Examining Board in England are held this month.

NOVEMBER, 1900.

		Notice—30th, last day for applications for Medical and [Surgical Registrarships.
1	TH	All Saints.
2	F	All Souls.
3	S	
4	S	Twenty-first Sunday after Trinity.
5	M	Last Day for Entry for M.D. and M.S. Exams. Univ. Lond.
6	TU	
7	W	Last day for applications for House Offices, &c.*
8	TH	
9	F	Prince of Wales born, 1841.
10	S	
11	S	Twenty-second Sunday after Trinity.
12	M	
13	TU	
14	W	Meeting to appoint House Officers, &c.
15	TH	
16	F	
17	S	
18	S	Twenty-third Sunday after Trinity.
19	M	[Entry for B.S. Exam., Univ. Lond.
20	TU	Univ. Lond. M.B. Pass List published. Last day for
21	W	Univ. Lond. M.B. Honours Exam.
22	TH	
23	F	
24	S	
25	S	Twenty-fourth Sunday after Trinity.
26	M	
27	TU	
28	W	
29	TH	
30	F	St. Andrew. Last day for applications for Medical and [Surgical Registrarships.

Examinations for the Fellowship of the Royal College of Surgeons of England held this month.

* Applications for these appointments to be made on forms to be obtained at the Medical Secretary's Office.

DECEMBER, 1900.

1	S	Last day for Entry for Matriculation Univ. Lond.
2	S	Advent Sunday.
3	M	Univ. Lond. M.D. and M.S. Exam. [duty.
4	TU	Univ. Lond. B.S. Exam. House Officers, &c., commence
5	W	Last day for applications for Clinical Clerkships and
6	TH	[Dresserships.
7	F	
8	S	
9	S	Second Sunday in Advent.
10	M	
11	TU	
12	W	Meeting to appoint Clinical Clerks and Dressers.
13	TH	
14	F	
15	S	
16	S	Third Sunday in Advent.
17	M	Univ. Lond. B.S. Pass List published.
18	TU	
19	W	Univ. Lond. M.D. and M.S. Lists published.
20	TH	
21	F	St. Thomas.
22	S	Last day for Entry for Prel. Sci. Exam. Univ. Lond.
23	S	Fourth Sunday in Advent.
24	M	Last day for Entry for Int. Med. Exam. Univ. Lond.
25	TU	CHRISTMAS DAY.
26	W	Saint Stephen. Bank Holiday.
27	TH	Saint John, Evang.
28	F	Holy Innocents.
29	S	
30	S	First Sunday after Christmas.
31	M	

University of Cambridge First, Second, and Third M.B. Examinations are held this month.

JANUARY, 1901.

1	TU	Clinical Clerks and Dressers commence duty.
2	W	
3	TH	
4	F	Meeting of Library Committee.
5	S	
6	S	Epiphany.
7	M	
8	TU	
9	W	
10	TH	
11	F	
12	S	
13	S	First Sunday after Epiphany.
14	M	Univ. Lond. Matriculation Examination.
15	TU	
16	W	
17	TH	
18	F	
19	S	
20	S	Second Sunday after Epiphany.
21	M	Univ. Lond. Prelim. Scientific (M.B.) Exam. and Intermd. [Exam. in Medicine.
22	TU	
23	W	
24	TH	
25	F	Conversion of St. Paul.
26	S	
27	S	Third Sunday after Epiphany.
28	M	
29	TU	
30	W	
31	TH	

First, Second, and Third Examinations of the Examining Board in England are held this month.

Examinations for Diploma in Public Health of the Royal Colleges of Physicians and Surgeons held this month.

The Registration and Museum Committees meet during this month.

FEBRUARY, 1901.

1	F	
2	S	
3	S	Septuagesima Sunday.
4	M	
5	TU	
6	W	Last day for applications for House Offices, &c.* Univ.
7	TH	[Lond. Prel. Sci. (M. B.) List published.]
8	F	
9	S	
10	S	Sexagesima Sunday. Queen Victoria married, 1840.
11	M	Univ. Lond. Int. Med. Pass List published.
12	TU	
13	W	Meeting to appoint House Officers, &c. Univ. Lond.
14	TH	[Matric. Pass List published.]
15	F	
16	S	
17	S	Quinquagesima Sunday.
18	M	
19	TU	Shrove Tuesday.
20	W	Ash Wednesday.
21	TH	
22	F	
23	S	
24	S	First Sunday in Lent. St. Matthias.
25	M	
26	TU	
27	W	
28	TH	

* Applications for these appointments to be made on forms to be obtained at the Medical Secretary's Office.

MARCH, 1901.

	F	
2	S	
3	S	Second Sunday in Lent.
4	M	
5	TU	House Officers, &c., commence duty.
6	W	Last day for applications for Clinical Clerkships and [Dresserships.
7	TH	
8	F	
9	S	
10	S	Third Sunday in Lent. Prince of Wales married, 1863.
11	M	
12	TU	
13	W	Meeting to appoint Clinical Clerks and Dressers.
14	TH	
15	F	
16	S	
17	S	Fourth Sunday in Lent.
18	M	
19	TU	
20	W	
21	TH	
22	F	
23	S	
24	S	Fifth Sunday in Lent.
25	M	Annunciation. LADY DAY.
26	TU	
27	W	
28	TH	
29	F	
30	S	Last day for Reports for Solly Medal. Registrar's Report for [last year due.
31	S	Palm Sunday.

APRIL, 1901.

1	M	
2	TU	Clinical Clerks and Dressers commence duty.
3	W	
4	TH	
5	F	Good Friday.
6	S	
7	S	Easter Day.
8	M	Bank Holiday. Last day for Entry for M.B. Exam. Univ. [Lond.]
9	TU	
10	W	
11	TH	
12	F	
13	S	
14	S	First Sunday after Easter. Low Sunday.
15	M	
16	TU	
17	W	
18	TH	
19	F	
20	S	
21	S	Second Sunday after Easter.
22	M	
23	TU	
24	W	
25	TH	St. Mark.
26	F	
27	S	
28	S	Third Sunday after Easter.
29	M	
30	TU	

Univ. Camb. Third M.B. and First, Second, and Third Examinations of the Examining Board in England are held this month.

The Examinations for the Mead and Cheselden Medals take place this month.

The Annual Inspection of the Museum and meeting of Museum Committee take place during this month.

The Registration Committee meets during this month.

MAY, 1901.

1	W	St. Philip and St. James. Last day for Entry for Matric. Univ. Lond. Last day for application for House Offices, &c.*
2	TH	
3	F	
4	S	
5	S	Fourth Sunday after Easter.
6	M	Univ. Lond. M.B. Exam.
7	TU	
8	W	Meeting to appoint House Officers, &c.
9	TH	
10	F	
11	S	First Stone of St. Thomas's New Hospital laid by H.M. the Queen, 1868.
12	S	Fifth Sunday after Easter. Rogation Sunday.
13	M	
14	TU	
15	W	
16	TH	Ascension Day. Holy Thursday.
17	F	
18	S	
19	S	Sunday after Ascension Day.
20	M	
21	TU	
22	W	
23	TH	
24	F	Queen Victoria born, 1819.
25	S	
26	S	Whit Sunday.
27	M	Bank Holiday. No lectures.
28	TU	Univ. Lond. M.B. Pass List published.
29	W	
30	TH	
31	F	

Examinations for the Fellowship of the Royal College of Surgeons of England held this month.

* Applications for these appointments to be made on forms to be obtained at the Medical Secretary's Office.

JUNE, 1901.

1	S	Last day for Entry for Prel. Sci. (M.B.) Exam. Univ. Lond.
2	S	Trinity Sunday.
3	M	Last day for Entry for Int. Med. Exam. Univ. Lond.
4	TU	House Officers, &c., commence duty.
5	W	Last day for applications for Clinical Clerkships and
6	TH	[Dresserships.]
7	F	
8	S	
9	S	[opened by H.R.H. the Duke of Connaught, K.G., 1894.]
10	M	First Sunday after Trinity. New Buildings of Medical School
	Univ. Lond. Matric. Exam.	
11	TU	St. Barnabas.
12	W	Meeting to appoint Clinical Clerks and Dressers.
13	TH	
14	F	
15	S	
16	S	Second Sunday after Trinity.
17	M	
18	TU	
19	W	
20	TH	Queen's Accession.
21	F	New St. Thomas's Hospital opened by H. M. the Queen,
22	S	[1871.]
23	S	Third Sunday after Trinity.
24	M	St. John Baptist. Midsummer Day.
25	TU	
26	W	
27	TH	
28	F	Queen Victoria crowned, 1838.
29	S	St. Peter.
30	S	Fourth Sunday after Trinity.

The Harveian Oration is delivered at the Royal College of Physicians annually in the month of June.

Doctor of Science Examination at London University takes place within the first 21 days of June.

Univ. Camb. First and Second M.B. Examinations are held within the first 14 days of June.

Examination for the Beaney Scholarship held this month.

JULY, 1901.

1	M	Univ. Lond. Int. Med. Exam.
2	TU	Clinical Clerks and Dressers commence duty.
3	W	Last day for applications for House Offices, &c., for
4	TH	[September.*]
5	F	Meeting of Library Committee.
6	S	
7	S	Fifth Sunday after Trinity.
8	M	Univ. Lond. Prelim. Scientific (M.B.) Exam.
9	TU	
10	W	Meeting to appoint House Officers, &c., for September.
11	TH	
12	F	
13	S	
14	S	Sixth Sunday after Trinity.
15	M	
16	TU	
17	W	Univ. Lond. Matric. List published.
18	TH	
19	F	
20	S	
21	S	Seventh Sunday after Trinity.
22	M	Univ. Lond. Int. Med. Pass List published.
23	TU	
24	W	
25	TH	St. James.
26	F	
27	S	
28	S	Eighth Sunday after Trinity.
29	M	
30	TU	
31	W	

First, Second, and Third Examinations of the Examining Board in England are held this month.

Examinations for Diploma in Public Health of the Royal Colleges of Physicians and Surgeons held this month.

The Registration and Museum Committees meet during this month.

** Applications for these appointments to be made on forms to be obtained at the Medical Secretary's Office.*

AUGUST, 1901.

1	TH	
2	F	
3	S	
4	S	Ninth Sunday after Trinity.
5	M	Bank Holiday.
6	TU	
7	W	Univ. Lond. Prelim. Sci. Pass List published.
8	TH	
9	F	
10	S	
11	S	Tenth Sunday after Trinity.
12	M	
13	TU	
14	W	
15	TH	
16	F	
17	S	
18	S	Eleventh Sunday after Trinity.
19	M	
20	TU	
21	W	
22	TH	
23	F	
24	S	St. Bartholomew.
25	S	Twelfth Sunday after Trinity.
26	M	
27	TU	
28	W	
29	TH	
30	F	
31	S	

SEPTEMBER, 1901.

1	S	Thirteenth Sunday after Trinity.
2	M	
3	TU	House Officers, &c., commence duty.
4	W	Last day for applications for Clinical Clerkships and
5	TH	[Dresserships.]
6	F	
7	S	
8	S	Fourteenth Sunday after Trinity.
9	M	
10	TU	
11	W	Meeting to appoint Clinical Clerks and Dressers.
12	TH	
13	F	
14	S	
15	S	Fifteenth Sunday after Trinity.
16	M	
17	TU	
18	W	
19	TH	
20	F	
21	S	St. Matthew.
22	S	Sixteenth Sunday after Trinity.
23	M	Last day for Entry for B.Sc. Exam., Univ. Lond.
24	TU	
25	W	
26	TH	
27	F	
28	S	
29	S	Seventeenth Sunday after Trinity. Michaelmas Day.
30	M	Last day for Essay for Grainger Prize. Last day for Entry for M.B. Exam. Univ. Lond.

The Hospital Entrance Scholarships Examination takes place during the last week of this month.

OCTOBER, 1901.

1	TU	Clinical Clerks and Dressers commence duty.
2	W	
3	TH	
4	F	Meeting of Library Committee.
5	S	
6	S	Eighteenth Sunday after Trinity.
7	M	
8	TU	
9	W	
10	TH	
11	F	
12	S	
13	S	Nineteenth Sunday after Trinity.
14	M	
15	TU	
16	W	
17	TH	
18	F	St. Luke.
19	S	
20	S	Twentieth Sunday after Trinity.
21	M	Univ. Lond. B.Sc. Exam.
22	TU	
23	W	
24	TH	
25	F	
26	S	
27	S	Twenty-first Sunday after Trinity.
28	M	St. Simon and St. Jude. Univ. Lond. M.B. Exam.
29	TU	
30	W	
31	TH	

The Registration and Museum Committees meet during this month.

The Primary Examination of the Society of Apothecaries is held Quarterly, in the months of October, January, April, and July. The Final is held monthly; the Surgical part commences on the second Wednesday, and the Medical on the Monday following.

First, Second, and Third Examinations of the Examining Board in England are held this month.

HOLDERS OF APPOINTMENTS IN ST. THOMAS'S HOSPITAL SINCE 1871.

RESIDENT ASSISTANT PHYSICIANS.

1871.	G. H. EVANS	1885.	H. W. G. MACKENZIE
1874.	F. C. TURNER	1888.	H. P. HAWKINS
1876.	S. J. SHARKEY	1891.	H. G. TURNERY
1880.	G. GULLIVER	1894.	S. G. TOLLER
1882.	C. E. SHEPPARD	1897.	C. R. BOX
1883.	R. PERCY SMITH	1900.	A. E. RUSSELL.

RESIDENT ASSISTANT SURGEONS.

1871.	W. W. WAGSTAFFE	1886.	W. H. BATTLE
1874.	A. O. MACKELLAR	1888.	H. B. ROBINSON
1876.	H. H. CLUTTON	1891.	E. C. STABB
1880.	B. PITTS	1894.	F. C. ABBOTT
1883.	G. H. MAKINS	1897.	C. S. WALLACE

MEDICAL REGISTRARS.

1871.	S. E. SOLLY	1880.	G. GULLIVER
1872.	F. POLLARD	1882.	C. E. SHEPPARD
1873.	W. S. GREENFIELD	1883.	W. B. HADDEN
1875.	H. W. VERDON	1888.	H. W. G. MACKENZIE
1876.	T. C. CHARLES	1893.	S. G. TOLLER
1877.	E. S. NORRIS	1894.	C. R. BOX
1878.	T. C. CHARLES	1897.	A. E. RUSSELL
1879.	W. B. HADDEN	1900.	A. W. SIKES.

SURGICAL REGISTRARS.

1871.	W. ANDERSON	1886.	G. H. MAKINS
1872.	C. E. SAUNDERS	1887.	C. A. BALLANCE
1873.	C. CREIGHTON	1888.	E. SOLLY
1874.	S. OSBORN	1891.	E. C. STABB
1876.	{ H. H. CLUTTON C. H. NEWBY	1892.	F. C. ABBOTT
1878.	H. P. POTTER	1894.	C. S. WALLACE
1881.	W. H. BATTLE	1897.	E. O. THURSTON
		1900.	E. M. CORNER.

OBSTETRIC REGISTRARS.

1893.	W. W. H. TATE	1897.	A. F. STABB
		1898.	J. S. FAIRBAIRN

HOUSE PHYSICIANS.

1871-2.	E. COX	1873-4.	E. WELCHMAN
	S. OSBORN		H. B. DONKIN
	J. S. SLATER		T. HIGHTON
1872-3.	B. ADDY		C. M. TAYLOR
	A. H. LAVER		H. S. BENNETT
	L. WILLIAMS	1874-5.	A. S. L. NEWINGTON
	W. GARTON		J. W. CLARKSON
	R. ZIMMERMAN		W. S. MAVOR
			A. LINGARD

HOUSE PHYSICIANS—*continued.*

1875-6.	C. H. NEWBY G. F. ROSSITER W. EDMUNDS H. P. POTTER S. W. J. JOSEPH	1886-7.	A. E. GODFREY } (Non- A. J. H. MONTAGUE } res.)
1876-7.	T. TWINING J. F. NICHOLSON J. R. LEESON W. H. PAGE.	1887-8.	H. P. HAWKINS H. J. MACEVOY W. W. ORD E. HOBHOUSE R. NAIRN H. J. SMYTH R. NAIRN } (Non-res.) J. T. CALVERT }
1877-8.	J. A. M. MOULLIN G. H. MAKINS H. U. SMITH W. TYRRELL	1888-9.	H. B. LUARD C. W. COOKE H. C. BRISTOWE H. G. TURNERY C. H. ECCLES } (Non- W. H. L. COPELAND } res.)
1878-9.	W. H. BATTLE G. H. D. GIMLETT C. E. SHEPPARD F. M. SANDWITH	1889-90.	T. P. COWEN F. C. ABBOTT F. E. FORWARD S. G. TOLLER M. H. SPENCER } (Non- L. COBBETT } res.)
1879-80.	W. W. GROOME R. P. SMITH J. SHAW A. NEWSHOLME	1890-1.	W. W. STABB T. A. DUKES A. KING W. F. UMNEY G. H. WICKHAM } (Non- H. J. COOPER } res.) H. LOW } C. P. LOVELL }
1880-1.	H. P. BUTLER G. S. HATTON H. R. HUTTON T. D. ACLAND	1891-2.	C. R. BOX T. H. KELLOCK C. LATTER J. J. PERKINS C. WYMAN G. R. F. STILWELL } (Non- D. F. SHEARER } res.) W. P. PURVIS }
1881-2.	T. D. SAVILL C. F. COXWELL A. B. CARPENTER S. W. SUTTON	1892-3.	W. A. BOWRING W. WATKINS-PITCHFORD C. S. JAFFE A. R. O. MILTON W. P. FOOKS A. DALZEIL } (Non- E. M. HAINWORTH } res.) M. R. P. DORMAN }
1882-3.	A. E. WELLS W. WANSBROUGH JONES C. W. HAIG-BROWN W. FELL E. F. WHITE } (Non- L. W. BICKLE } res.)	1893-4.	T. W. HICKS G. W. THOMPSON A. E. RUSSELL W. J. C. MERRY P. NORTHCOTE G. W. H. BIRD } (Non- F. FERSHOUSE } res.) C. W. WINDSOR }
1883-4.	A. FOXWELL H. M. N. MILTON C. D. GREEN W. HULL W. J. SHEPPARD } (Non- J. ORFORD } res.)	1894-5.	R. E. NIX A. M. COLLCUTT E. A. SAUNDERS G. G. GENGE
1884-5.	G. D. JOHNSTON F. F. CAIGER H. B. ROBINSON H. W. G. MACKENZIE F. W. S. STONE } (Non- H. H. LANKESTER } res.)		
1885-6.	R. M. WILLIAMS J. M. CLARKE J. S. HUTTON E. D. RITCHIE T. GLOVER LYON } (Non- Y. SANHEYOSHI } res.) F. M. HAIG }		
1886-7.	F. D. CROWDY A. A. BROCKATT C. S. EVANS S. W. WHEATON		

HOUSE PHYSICIANS—*continued.*

1894-5.	T. G. NICHOLSON A. S. F. GRÜNBAUM F. J. BRAKENRIDGE	(Non-res.)	1897-8.	W. McDougall H. N. Goode H. E. Hewitt R. H. Bell H. H. Scott H. F. Shea
1895-6.	J. W. LAVER E. G. C. DANIEL L. L. JENNER F. B. THORNTON W. E. DIXON P. J. A. SECCOMBE	(Non-res.)	1898-9.	H. C. HASLAM R. W. C. PIERCE J. R. CHARLES E. F. BUZZARD G. B. THWAITES H. D. SINGER
	F. G. LAYTON E. W. PALIN P. S. HICHENS	(Non-res.)		E. A. GATES A. E. STEVENS
1896-7.	W. H. J. PATERSON E. H. T. NASH G. J. CONFORD L. W. RICHARDS A. W. STIKES J. P. SCATCHARD J. S. FAIRBAIRN E. STAINER		1899-00.	E. H. ROSS H. C. THORP A. H. GREG A. BEVAN F. H. ELLIS B. F. HOWLETT
1897-8.	H. C. JONAS C. G. SELIGMANN			H. R. BEALE L. S. DUDGEON

HOUSE SURGEONS.

1871-2.	R. CORY H. WILLIAMS S. OSBORN	1879-80.	R. P. SMITH C. E. SHEPPARD
1872-3.	T. H. BONSER E. SERGEANT W. GARTON A. H. LAVER G. CLEGHORN	1880-1.	J. R. LUNN C. A. BALLANCE
1873-4.	I. BOULGER E. WELCHMAN A. V. MAYBURY H. W. VERDON	1881-2.	H. P. BUTLER A. B. CARPENTER
1874-5.	J. CROSSMAN G. M. TAYLOR G. F. ROSSITER	1882-3.	T. D. ACLAND F. W. MARLOW
1875-6.	J. W. CLARKSON H. P. POTTER H. H. CLUTTON	1883-4.	M. P. M. COLLIER E. F. WHITE
1876-7.	C. H. NEWBY R. MAPLES B. PITTS R. MAPLES	1884-5.	W. A. DUNCAN C. W. HAIG BROWN
1877-8.	C. C. SMITH W. EDMUNDSON J. F. NICHOLSON	1885-6.	H. M. MILTON A. E. WELLS
1878-9.	J. BLACK F. H. WEEKES W. H. BATTLE G. H. MAKINS G. H. D. GIMLETTE	1886-7.	W. WANSBROUGH JONES G. F. COOPER
1879-80.	H. U. SMITH W. F. HASLAM K. TAKAKI H. CASTLE D. S. DAVIES	1887-8.	F. F. CAIGER G. D. JOHNSTON
	R. J. WILLIAMSON	1888-9.	J. ORFORD H. B. ROBINSON
			W. HULL
			C. D. GREEN
			R. LAWSON
			B. RELTON
			F. D. CROWDY
			H. CAMERON KIDD
			E. S. GOODY
			F. E. NICHOL
			E. D. RITCHIE
			J. S. HUTTON
			W. H. C. STAVELEY
			S. H. JONES
			J. H. TONKING
			E. C. STABB
			L. A. BIDWELL
			W. F. BROOK

HOUSE SURGEONS—*continued.*

1888-9.	F. FAWSSETT W. W. ORD J. T. CALVERT F. C. ABBOTT R. V. SOLLY C. H. JAMES C. BROWN	1894-5.	L. J. MISKIN A. W. CUFF W. J. C. MERRY G. J. ARNOLD R. FOX SYMONS A. E. RUSSELL H. W. HARDING
1889-90.	H. G. TURNERY A. N. BOYCOTT H. H. HULBERT F. R. S. MILTON T. W. LAMBERT T. P. COWEN G. E. ANSON H. GERVIS	1895-6.	E. O. THURSTON A. L. HOME W. G. STONE H. J. DAVIS L. A. R. WALLACE H. C. CROUCH J. L. PRAIN G. J. CONFORD
1890-1.	A. F. STABB A. C. LANKESTER H. W. NIX E. E. WARE S. G. TOLLER W. S. GRIFFITH W. G. G. STOKES L. A. J. ROUILLARD	1896-7.	B. DYBALL P. W. KENT J. SMITH W. D. FRAZER A. ROTHERHAM A. J. MARTINEAU F. H. GERVIS R. G. STRANGE G. E. O. TAYLOR
1891-2.	L. COBBETT T. H. HAYDON J. R. HARPER C. WYMAN T. H. KELLOCK C. R. BOX W. F. E. MILTON T. A. M. FORDE	1897-8.	W. H. J. PATERSON A. W. TUKE L. GILBERT S. N. BABINGTON J. F. McCLEAN H. J. MARRIAGE J. S. HALL H. H. SANGUINETTI
1892-3.	A. BANKS H. BURDEN J. H. FISHER P. J. ATKEY W. P. PURVIS R. R. LAW W. G. SUTCLIFFE W. L. WAINWRIGHT	1898-9.	E. H. COBB A. C. ROBINSON F. L. A. GREAVES A. H. GREG S. O. BINGHAM E. M. CORNER J. A. BARNES J. E. KILVERT
1893-4.	C. S. WALLACE E. SMITH W. REDPATH C. PLANCK S. W. F. RICHARDSON E. M. HAINWORTH A. R. O. MILTON G. W. THOMPSON H. A. DICKSON	1899-00.	H. J. PHILLIPS P. W. G. SARGENT S. A. LUCAS H. T. D. ACLAND A. WEBB JONES E. A. GATES E. C. BOURDAS N. UNSWORTH

ASSISTANT HOUSE PHYSICIANS.

1877-8.	W. TYRRELL R. B. BOTHAMLEY W. H. BATTLE E. H. HARE	1878-9.	R. C. BENNINGTON
1878-9.	S. A. CRICK J. H. BATTYE K. TAKAKI W. W. GROOME W. B. HADDEN W. F. HASLAM	1879-80.	R. P. SMITH D. S. DAVIES J. SHAW A. NEWSHOLME J. R. LUNN R. J. WILLIAMSON
		1880-1.	J. R. LUNN T. D. SAVILL G. S. HATTON

ASSISTANT HOUSE PHYSICIANS—*continued.*

1880-1.	F. R. WALTERS C. B. RICHARDSON H. SWALE J. B. LAWFORD C. A. BALLANCE M. P. M. COLLIER A. B. CARPENTER H. N. HOBERTON S. W. SUTTON A. E. WELLS F. W. MARLOW R. HEELIS F. E. MARSTON G. F. COOPER C. W. HAIG-BROWN H. M. N. MILTON W. FELL W. J. SHEPPARD W. HULL F. F. CAIGER C. D. GREEN W. B. TOMSON T. SCUTT Y. SANEYOSHI R. LAWSON H. W. G. MACKENZIE	1884-5 1885-6 1886-7 1887-8 1888-9. 1889-90. 1899. 1899-00.	R. M. WILLIAMS J. R. STADDON E. D. RITCHIE E. S. GOODY A. E. GODFREY C. S. EVANS H. CAMERON KIDD W. H. C. STAVELEY H. P. HAWKINS H. A. SANSON H. T. BULSTRODE S. B. COOK H. B. SEDDON G. R. ANDERSON W. B. DE JERSEY T. H. DICKSON E. H. ROSS H. C. THORP J. GAFF A. BEVAN F. H. ELLIS B. F. HOWLETT H. R. BEALE L. S. DUDGEON E. W. HEDLEY F. C. EVE
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ASSISTANT HOUSE SURGEONS.

1877-8.	E. L. G. GAMBLE G. H. D. GIMLETTE	1885-6. 1886-7.	E. D. RITCHIE F. D. CROWDY H. CAMERON KIDD E. S. GOODY F. E. NICHOL C. S. EVANS
1878-9.	W. F. HASLAM H. CASTLE R. P. SMITH D. S. DAVIES		W. H. C. STAVELEY S. H. JONES K. TOTSUKA J. H. TONKING
1879-80.	R. J. WILLIAMSON C. A. BALLANCE A. NEWSHOLME J. R. LUNN		E. C. STABB L. A. BIDWELL W. F. BROOK J. T. CALVERT
1880-1.	F. R. WALTERS C. B. RICHARDSON M. P. M. COLLIER H. SWALE	1887-8.	W. W. ORD F. FAWSSETT E. SOLLY C. BROWN
1881-2.	S. W. SUTTON A. E. WELLS E. F. WHITE C. W. HAIG-BROWN		R. V. SOLLY C. H. JAMES C. W. COOKE S. B. COOK
1882-3.	H. M. N. MILTON W. FELL G. F. COOPER W. HULL	1888-9.	E. HOBBHOUSE H. DUNCAN F. C. ABBOTT A. N. BOYCOTT
1883-4.	W. WANSBROUGH JONES G. D. JOHNSTON F. F. CAIGER W. J. SHEPPARD		H. H. HULBERT F. R. S. MILTON H. C. BRISTOWE G. E. ANSON
1884-5.	H. B. ROBINSON C. D. GREEN R. LAWSON B. RELTON Y. SANEYOSHI	1889-90.	H. GERVIS

ASSISTANT HOUSE SURGEONS—*continued.*

1889-90.	T. P. COWEN A. F. STABB A. C. LANKESTER J. H. DEWHURST	1894-5.	A. L. HOME W. G. STONE H. J. DAVIS L. A. R. WALLACE
1890-1.	H. W. NIX E. E. WARE S. G. TOLLER W. G. G. STOKES D. F. SHEARER L. A. J. ROUILARD T. H. HAYDON J. R. HARPER	1895-6.	H. C. CROUCH J. L. PRAIN G. J. CONFORD B. DYBALL P. W. KENT J. SMITH W. D. FRAZER
1891-2.	L. COBBETT C. WYMAN W. F. E. MILTON T. A. M. FORDE T. H. KELLOCK C. R. BOX H. BURDEN P. J. ATKEY	1896-7.	A. J. MARTINEAU F. H. GERVIS R. G. STRANGE G. E. O. TAYLOR W. H. J. PATERSON A. W. TUKE L. GILBERT S. N. BABINGTON
1892-3.	A. BANKS J. H. FISHER R. R. LAW W. G. SUTCLIFFE W. P. PURVIS W. L. WAINWRIGHT C. S. WALLACE E. SMITH	1897-8.	J. F. McCLEAN H. J. MARRIAGE J. S. HALL H. H. SANGUINETTI E. H. COBB A. C. ROBINSON F. L. A. GREAVES A. H. GREG
1893-4.	W. REDPATH C. PLANCK E. M. HAINWORTH A. R. O. MILTON S. W. F. RICHARDSON R. W. ORD J. W. HEWETT H. A. DICKSON	1898-9.	S. O. BINGHAM E. M. CORNER J. A. BARNES J. E. KILVERT H. J. PHILLIPS P. W. G. SARGENT S. A. LUCAS H. T. D. ACLAND
1894-5.	L. J. MISKIN A. W. CUFF G. J. ARNOLD R. FOX SYMONS A. E. RUSSELL H. W. HARDING E. O. THURSTON	1899-00.	A. WEBB JONES. E. A. GATES E. C. BOURDAS N. UNSWORTH A. E. MARTIN C. L. HAWKINS J. F. CUNNINGHAM Y. TAKAKI

RESIDENT ACCOUCHEURS.

1871-2.	G. C. FRANKLIN. B. ADDY W. GARTON	1875-6.	G. F. ROSSITER C. C. SMITH
1872-3.	J. S. SLATER M. H. C. PALMER E. SERGEANT L. WILLIAMS	1876-7.	W. MORGAN T. MILMAN B. PITTS R. MAPLES
1873-4.	G. M. WHITEHEAD C. H. NEWBY I. BOULGER E. H. DAVIS	1877-8.	C. H. H. CAMERON G. H. D. GIMLETTE C. H. WHITE F. H. WEEKES
1874-5.	H. S. BENNETT C. M. TAYLOR	1878-9.	J. F. NICHOLSON W. TYRRELL F. M. SANDWITH H. U. SMITH
1875-6.	W. EDMUND S. W. J. JOSEPH		

RESIDENT ACCOUCHEURS—*continued.*

1879-80.	W. H. BATTLE K. TAKAKI C. E. SHEPPARD C. A. BALLANCE	1885-6.	R. E. ROUSE J. E. KERSHAW H. H. LANKESTER A. A. BROCKATT
1880-1.	H. CASTLE A. NEWSHOLME J. SHAW J. R. LUNN	1886-7.	J. S. HUTTON C. YEOMAN A. E. GODFREY H. J. MACEVOY
1881-2.	W. F. HASLAM H. P. BUTLER W. A. DUNCAN T. D. ACLAND	1887-8.	E. SOLLY W. A. BOND H. J. SMYTH J. D. BALLANCE
1882-3.	A. E. WELLS G. F. COOPER S. W. SUTTON T. D. SAVILL	1888-9.	S. W. WHEATON C. H. JAMES H. B. LUARD E. C. STABB
1883-4.	F. F. CAIGER W. FELL W. J. SHEPPARD W. WANSBROUGH JONES	1889-90.	F. FAWSSETT G. R. ANDERSON G. E. ANSON A. N. BOYCOTT
1884-5.	J. ORFORD W. HULL C. D. GREEN G. D. JOHNSTON	1890-1.	H. B. OSBURN H. GERVIS H. LOW W. R. CARTER

SENIOR OBSTETRIC HOUSE PHYSICIANS.

1891-2.	J. R. HARPER W. G. G. STOKES W. F. UMLEY A. BANKS	1895-6.	E. A. SAUNDERS G. G. GENGE
1892-3.	W. L. WAINWRIGHT T. H. HAYDON C. S. WALLACE R. K. ELLIS	1896-7.	C. W. GRANT WILSON P. L. BLABER E. L. COLLIS A. L. HOME
1893-4.	W. A. BOWRING J. H. FISHER R. F. CHANCE T. W. HICKS	1897-8.	J. B. TOMBLESON J. S. FAIRBAIRN G. D. HINDLEY S. D. TURNER
1894-5.	C. S. JAFFÉ P. C. FENWICK E. G. E. ARNOLD W. E. F. TINLEY	1898-9.	H. T. M. ALFORD H. F. SHEA J. F. McCLEAN R. H. BELL
1895-6.	S. W. F. RICHARDSON G. CANDLER	1899-00.	S. H. BELFRAGE H. M. SCAPING G. B. THWAITES H. H. R. CLARKE

SENIOR OBSTETRIC CLERKS.

1889-90.	H. B. OSBURN H. LOW	1890-1.	W. R. CARTER J. R. HARPER H. D. LEVICK
1890-1.	W. G. G. STOKES		

JUNIOR OBSTETRIC HOUSE PHYSICIANS.

1891-2.	W. F. UMLEY A. BANKS W. L. WAINWRIGHT T. H. HAYDON	1895-6.	G. G. GENCE C. W. GRANT WILSON.
1892-3.	C. LATTER C. S. WALLACE R. K. ELLIS W. A. BOWRING	1896-7.	P. L. BLABER E. L. COLLIS A. L. HOME J. B. TOMBESON
1893-4.	J. H. FISHER R. F. CHANCE T. W. HICKS C. S. JAFFÉ	1897-8.	J. P. SCATCHARD G. D. HINDLEY S. D. TURNER H. T. M. ALFORD
1894-5.	P. C. FENWICK E. G. E. ARNOLD W. E. F. TINLEY S. W. F. RICHARDSON	1898-9.	L. GILBERT J. F. McCLEAN R. H. BELL S. H. BELFRAGE
1895-6.	G. CANDLER E. A. SAUNDERS	1899-00.	H. M. SCAPING A. E. STEVENS H. H. R. CLARKE A. BEVAN

OPHTHALMIC HOUSE SURGEONS.

These appointments took the place of the "Clinical Assistants in the Eye Department."

1890-1.	H. C. BRISTOWE F. E. FORWARD	1895-6.	A. H. P. DAWNAY E. A. SAUNDERS
1891-2.	C. H. USHER S. G. TOLLER	1896-7.	P. S. HICHENS E. HOPKINSON
1892-3.	J. FISHER E. P. ISAACS	1897-8.	F. A. C. TYRRELL N. BABINGTON
1893-4.	J. F. RUDALL J. H. FISHER	1898-9.	J. S. HALL T. HOBAN
1894-5.	J. H. FISHER H. G. TOOMBS	1899-00.	J. E. KILVERT

SCHOLARSHIPS AND MEDALS.

ENTRANCE SCIENCE SCHOLARS.

1875-6.	H. A. H. FENTON T. D. SAVILL	1888-9.	E. M. HAINWORTH E. SMITH
1876-7.	R. J. WILLIAMSON H. N. HOLBERTON	1889-90.	T. G. NICHOLSON A. E. RUSSELL
1877-8.	W. WANSBROUGH JONES A. E. WELLS	1890-1.	P. J. DEAR W. E. DIXON H. C. CROUCH
1878-9.	W. HULL	1891-2.	A. H. STEWART F. H. GERVIS
1879-80.	R. M. WILLIAMS B. RELTON	1892-3.	A. W. SIKES C. G. SELIGMANN
1880-1.	R. LAWSON H. H. LANKESTER	1893-4.	R. W. C. PIERCE H. E. HEWITT
1881-2.	SYDNEY H. JONES J. S. HUTTON	1894-5.	J. GAFF H. R. BEALE
1882-3.	H. DUNCAN E. D. SHIRTLIFF	1895-6.	F. B. SKERRETT W. B. FRY
1883-4.	C. W. COOKE F. FAWSSETT	1896-7.	A. B. LINDSEY R. E. ROBERTS
1884-5.	F. C. ABBOTT C. J. MARTIN	1897-8.	W. H. HARWOOD-YARRED F. H. WHITEHEAD
1885-6.	A. F. STABB S. G. TOLLER	1898-9.	C. M. ROBERTS C. H. LATHAM
1886-7.	C. P. LOVELL M. C. CLUTTERBUCK	1899-00.	L. BATHURST L. CRASKE
1887-8.	J. E. HARRIS W. B. WINSTON		

UNIVERSITY SCHOLARS.

1894-5.	W. McDougall	1896-7.	R. J. HORTON SMITH
1895-6.	P. W. G. SARGENT	1897-8.	F. C. EVE
		1899-00.	A. C. HUDSON

TITE SCHOLARS.

1875. Change made in mode of award.

1861-2-3.	H. SUMMERHAYES	1885-6.	A. F. STABB
1864-5-8.	J. J. RIDGE	1886-7.	H. BURDEN
1867-8.	H. MEADOWS	1887-8.	J. H. FISHER
1870-1-2.	I. BOULGER	1888-9.	E. SMITH
1873-4-5.	F. H. PECK	1889-90.	S. W. F. RICHARDSON
1875-6.	T. D. SAVILL	1890-1.	K. J. PREVITÉ ORTON
1876-7.	W. A. DUNCAN	1891-2.	J. C. HARcourt
1877-8.	W. WANSBROUGH JONES	1892-3.	A. W. SIKES
1878-9.	F. H. FURNIVAL	1893-4.	H. E. HEWITT
1879-80.	C. D. GREEN	1894-5.	J. GAFF
1880-1.	R. LAWSON	1895-6.	C. F. SELOUS
1881-2.	SYDNEY H. JONES	1896-7.	C. N. SEARS
1882-3.	H. P. HAWKINS	1897-8.	W. H. HARWOOD-YARRED
1883-4.	F. FAWSSETT	1898-9.	G. C. ADENEY
1884-5.	F. C. ABBOTT	1899-00.	K. TAKAKI

MUSGROVE SCHOLARS.

Founded, April, 1875.

1875-6-7.	S. J. TAYLOR	1888-9-90.	J. H. FISHER
1877-8-9.	W. A. DUNCAN	1890-1-2.	S. W. F. RICHARDSON
1880-1-2.	W. B. TOMSON	1892-3-4.	M. TAKAYASU
1882-3-4.	S. H. JONES } K. TOTSUKA } æq.	1894-5-6.	H. E. HEWITT
1884-5-6.	F. FAWSSETT	1896-7.	C. F. SELOUS
1886-7-8.	A. F. STABB	1898-9-00.	C. U. IND

PEACOCK SCHOLARS.

1883-4-5.	H. P. HAWKINS	1893-4-5.	A. W. SIKES
1885-6-7.	F. C. ABBOTT	1895-6-7.	J. GAFF
1887-8-9.	C. P. LOVELL	1897-8-9.	C. N. SEARS
1889-90-1.	C. PLANCK	1899-00.	H. S. BENNETT } F. W. W. SMITH } æq.
1891-2-3.	G. G. GENGE		

CHESELDEN MEDALISTS.

1850-1.	F. J. MONEY	1875-6.	_____
1851-2.	H. LANKESTER	1876-7.	H. U. SMITH
	T. B. CROSBY (bronze medal)	1877-8.	W. F. HASLAM
1852-3.	J. E. MORETON	1878-9.	K. TAKAKI
1853-4.	W. N. CHIPPERFIELD	1879-80.	W. A. DUNCAN
1854-5.	W. M. ORD	1880-1.	C. W. HAIG-BROWN
1855-6.	J. W. COUSINS	1881-2.	_____
1856-7.	C. F. GEORGE	1882-3.	G. D. JOHNSTON
1857-8.	E. WOAKES	1883-4.	R. LAWSON
1858-9.	C. H. DRAKE	1884-5.	S. H. JONES
1859-60.	T. DRAKE	1885-6.	J. H. TONKING
1860-1.	J. W. HICKS	1886-7.	F. FAWSSETT
1861-2.	J. F. DECK	1887-8.	F. C. ABBOTT
1862-3.	C. A. GREAVES	1888-9.	A. C. LANKESTER
1863-4.	W. W. WAGSTAFFE	1889-90.	T. H. KELLOCK
1864-5.	F. H. WARD.	1890-1.	A. BANKS
1865-6.	W. W. INGLIS	1891-2.	W. G. SUTCLIFFE
1866-7.	W. ANDERSON	1892-3.	S. W. F. RICHARDSON
1867-8.	F. POLLARD	1893-4.	E. O. THURSTON
1868-9.	L. M. THOMAS	1894-5.	B. DYBALL
1869-70.	E. SERGEANT		A. J. MARTINEAU
1870-1.	J. H. BONSER		(Bronze Medal)
1871-2.	A. H. LAVER	1895-6.	J. P. SCATCHARD
1872-3.	G. F. ROSSITER	1896-7.	A. C. ROBINSON
1873-4.	H. P. POTTER	1897-8.	S. O. BINGHAM
1874-5.	J. F. NICHOLSON	1898-9.	H. T. D. ACLAND
		1899-00.	T. H. EDWARDS

NEWMAN SMITH PRIZE (MEAD).

1850.	J. W. KEYWORTH	1855.	W. H. STONE
1853.	J. E. MORETON	1858.	E. WOAKES
1854.	E. CLAPTON	1859.	J. HILDITCH

MEAD MEDALISTS.

In lieu of the Newman Smith Prize from December, 1874.

1874-5.	J. F. NICHOLSON	1886-7.	W. W. ORD
1875-6.		1887-8.	H. G. TURNERY
1876-7.	G. B. LONGSTAFF	1888-9.	S. G. TOLLER
1877-8.	S. J. TAYLOR	1889-90.	W. W. STABB
1878-9.	T. D. ACLAND	1890-1.	C. LATTER
1879-80.	C. F. COXWELL	1891-2.	A. R. O. MILTON
1880-1.	W. WANSBROUGH JONES	1892-3.	E. A. SAUNDERS
1881-2.	W. HULL	1893-4.	G. G. GENGE
1882-3.	F. F. CAIGER	1894-5.	F. B. THORNTON
1883-4.	H. W. G. MACKENZIE	1895-6.	A. W. SIKES
1884-5.	F. D. CROWDY	1896-7.	H. C. JONAS
1885-6.	S. W. WHEATON	1897-8.	E. F. BUZZARD
1885-6.	H. J. MACEVOY (Bronze Medal)	1898-9.	
		1899-00.	R. B. KINLOCH

WAINWRIGHT PRIZEMAN.

1898-9. R. J. HORTON-SMITH.

TREASURER'S GOLD MEDALISTS.

1846-7.	H. D. BENWELL	1872-3.	G. F. ROSSITER
1847-8.	J. S. BRISTOWE	1873-4.	H. C. SANDFORD
1848-9.	L. W. SEDGWICK	1874-5.	J. F. NICHOLSON
1849-50.	A. CARPENTER	1875-6.	
1850-1.	{ F. J. MONEY (Gold Medal) C. W. CHALDECOTT (Silver Medal)	1876-7.	C. E. SHEPPARD
1851-2.	H. LANKESTER	1877-8.	S. J. TAYLOR
1852-3.	J. E. MORETON	1878-9.	K. TAKAKI
1853-4.	W. N. CHIPPERFIELD	1879-80.	W. A. DUNCAN
1854-5.	W. M. ORD	1880-1.	W. WANSBROUGH JONES
1855-6.	W. H. STONE	1881-2.	W. J. SHEPPARD
1856-7.	J. WILLIAMS	1882-3.	W. B. TOMSON
1857-8.	H. GERVIS	1883-4.	R. LAWSON
1858-9.	C. H. DRAKE	1884-5.	S. H. JONES
1859-60.	T. DRAKE	1885-6.	H. J. SMYTH
1860-1.	J. W. HICKS	1886-7.	F. FAWSSETT
1861-2.	J. F. DECK	1887-8.	F. C. ABBOTT
1862-3.	H. SUMMERHAYES	1888-9.	A. F. STABB
1863-4.	W. W. WAGSTAFFE	1889-90.	A. KING
1864-5.	F. H. WARD	1890-1.	J. H. FISHER
1865-6.	A. WALLER	1891-2.	E. SMITH
1866-7.	N. C. DOBSON	1892-3.	S. W. F. RICHARDSON
1867-8.	J. J. RIDGE	1893-4.	G. G. GENGE
1868-9.	H. W. SAUNDERS	1894-5.	A. J. MARTINEAU
1869-70.	J. S. SLATER	1895-6.	J. P. SCATCHARD
1870-1.	B. ADDY	1896-7.	A. W. SIKES
1871-2.	A. V. MAYBURY	1897-8.	H. E. HEWITT
		1898-9.	J. GAFF
		1899-00.	F. B. SKERETT

SOLLY MEDALISTS.

Founded, 1873.

1877.	W. H. BATTLE	1888.	C. H. JAMES
	C. W. DE LACY EVANS	1890.	C. WYMAN
1878.	C. E. SHEPPARD	1892.	W. B. WINSTON
1880.	C. A. BALLANCE	1894.	M. A. TEALE
1882.	W. A. DUNCAN	1896.	E. H. T. NASH
1884.	J. PIETERSEN	1898.	C. W. PILCHER
1886.	E. SOLLY	1900.	J. E. H. SAWYER

GRAINGER TESTIMONIAL PRIZEMEN.

1866.	J. J. RIESE	1893-4.	A. S. F. GRÜNBAUM
1874-5.	H. P. PORTER	1896-7.	W. McDougall
1878-9.	W. A. DUNCAN	1897-8.	R. BEER
1882-3.	C. S. SHERRINGTON	1898-9.	F. C. EVE
1886-7.	F. G. PARSONS		

BRISTOWE MEDALISTS.

1894-5.	A. L. HOME	1897-8.	A. W. SIKES
1895-6.	E. L. COLLIS	1898-9.	H. D. SINGER
1896-7.	C. G. SELIGMANN	1899-00.	C. L. HAWKINS

THE SALTERS' COMPANY RESEARCH FELLOWS.

1895.	C. S. JAFFÉ	1899.	C. G. SELIGMAN
1896.	W. E. DIXON		

BEANEY SCHOLAR.

1896. B. DYBALL

SUTTON SAMS MEMORIAL PRIZEMAN.

1898. A. BEVAN.

LOCAL LIST OF OLD STUDENTS OF ST. THOMAS'S HOSPITAL.

ENGLAND AND WALES.

(Excluding the London District.)

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|--|---|
| ABBOTS-BROMLEY, STAFF.—
N. J. Newbould. | BANSTEAD DOWNS.—
F. Bryan. |
| ABERDARE, GLAMORG.—
E. Jones, E. J. T. Jones. | BARNSTAPLE, DEVON.—
J. R. Harper, J. Raby (retired). |
| ABERGAVENNY, N. WALES.—
S. H. R. Davies. | BARNT GREEN, WORC.—
W. C. Ambrose. |
| ABINGDON, BERKS.—
L. N. Pentreath. | BARROW-ON-TRENT, nr. DERBY.—
S. A. Crick. |
| ACCRINGTON, LANCS.—
E. H. T. Nash. | BARTON-UPON-HUMBER, LINC.—
W. H. Sissons. |
| ADDLESTONE, SURREY.—
H. W. Saunders. | BARRY DOCK, GLAMORG.—
P. W. Kent. |
| AINTREE, LANC.—
A. Price, E. S. Sugden. | BASCHURCH, SALOP.—
E. H. O. Sankey. |
| ALCONBURY HILL, HUNTINGDON.—
J. R. Garrood. | BASLOW, DERBYSHIRE.—
E. B. Wrench, E. M. Wrench. |
| ALDERLEY EDGE, MANCHESTER.—
J. R. Carver. | BATH, SOMERSET.—
R. A. Bayliss, A. L. Fuller, W. N. Heygate, J. Jarvis, P. King, W. S. Melsome, A. Osborne, W. H. Thorman. |
| ALDERNEY, CHANNEL ISLANDS.—
E. W. Livesey. | BATLEY, YORKS.—
J. Russell. |
| ALFORD, LINC.—
A. E. Odling. | BAWTRY, YORKS.—
W. F. Ward. |
| ALFRETON, DERBYSHIRE.—
F. M. Bingham, S. O. Bingham. | BECCLES, SUFFOLK.—
H. P. Helsham. |
| ALNWICK, NTHLD.—
R. B. Robson. | BECKENHAM, KENT.—
E. Carpenter, G. R. F. Stilwell, E. S. Whelpton. |
| ASHBURTON, DEVON.—
W. Ranson. | BECKLEY, SUSSEX.—
W. A. Montgomery. |
| ASHBY-DE-LA-ZOUCH, LEIC.—
R. R. W. Logan. | BEDFORD.—
F. H. Allfrey, C. G. Johnson, W. G. Johnson, A. S. Phillips, W. Stokes (retired). |
| ASKAM-IN-FURNESS, LANCS.—
S. B. Cook. | BEESTON, NOTTS.—
S. M. Wittaker. |
| ASTON CLINTON, BUCKS.—
H. P. Gilbert, R. B. Williams. | BEMBRIDGE, I. W.—
W. Orange. |
| AUDLEM, CHESH.—
H. Greaves. | BICKLEY, KENT.—
W. W. Inglis. |
| AUGHTON, YORKS.—
W. Garton. | BIRKENHEAD, CHESHIRE.—
H. L. Pearson. |
| AYLESTONE, LEIC.—
E. H. Snoad. | BIRMINGHAM, WARWICK.—
J. Des C. Ballance, H. R. Bracey, A. Foxwell, V. Graham, W. F. Haslam, F. V. Milward, W. Myers, M. J. Wakefield, W. Watkins-Pitchford, E. Whichello. |
| AYLSHAM, NORFOLK.—
P. C. Shepheard. | |
| BAGSHOT, SURREY.—
H. B. Osburn. | |
| BAKEWELL, DERBY.—
E. M. Wrench. | |
| BAMBER BRIDGE, LANCS.—
J. Bibby. | |
| BANBURY, OXFORD.—
R. Rygate. | |

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- ST. ALBAN'S, HERTS.—**
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W. Brisley, C. Hathaway, T. A.
Papillon, E. D. Shirtliff.
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- SKETTY, GLAMORG.—**
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Welch.
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Junr.
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GLASGOW.—
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J. Garner.
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J. T. McDonagh.
- DUNMURRY, ANTRIM.—
D. P. Gaussen.
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T. G. Fenton.
- KILLADEAS, CO. FERMANGH.—
P. S. Hichens.
- KILLARNEY, KERRY.—
G. Stoker.
- KNOCK, ANTRIM.—
J. K. Kerr.
- LARNE, ANTRIM.—
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- PORTRUSH, ANTRIM.—
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J. E. Ker.

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- LUCCA, BATHS OF.—H. Danvers (Summer).
- SAN REMO.—A. J. Freeman.

MALTA.

VALETTA.—A. E. Mifsud.

MONACO.

W. A. Fitzgerald, R. E. Rouse.

CEYLON.

HATTON.—A. R. O. Milton.

CHINA.

- HANGCHOW.—S. N. Babington.
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- KAILA KANDI.—D. Taylor.
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- PURULIA.—P. A. Rigby.
- SAVANTVADI.—D. G. Dalgado.
- SIDAPUR.—R. F. Hiley.
- TUNDLA.—H. G. Waters.

JAPAN.

- SHICHÔME.—M. Takayasu.
- TOKIO.—K. Hayashi, Y. Saneyoshi, S. Suzuki, K. Takaki, K. Totsuka.

STRAITS SETTLEMENTS.

- KUANTAU.—J. Widner Rolph.
- SINGAPORE.—M. F. Simon.
- ULU PAHANG.—J. D. Gimlette.

TURKEY IN ASIA.

- BAGDAD.—H. M. Sutton.
- CONSTANTINOPLE.—J. F. McClean.
- JERUSALEM.—P. C. E. D'E. Wheeler.

CAPE COLONY.

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- FRASERBURG.—A. King.
- GRAHAMSTOWN.—G. C. Purvis.
- PORT ALFRED.—C. E. Jones.
- RONDEBOSCH.—J. H. De Villiers, E. S. Stevenson.
- STERKSTROOM.—C. Robertson.
- VICTORIA WEST.—G. B. S. Darter.

EGYPT.

- CAIRO.—F. R. S. Milton, H. M. N. Milton, F. M. Sandwith, S. G. Toller.

GOLD COAST.

ACCRA.—E. Mattei.
LAGOS.—Prince Orisadipe, O. Sapara.

MADEIRA.

M. C. Grabham.

MOROCCO.

E. S. Verdon.

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DURBAN.—C. H. Roberts, L. A. J. Rouillard, G. E. O. Taylor.
ISIPINGO.—F. W. Greene.
LADYSMITH.—J. A. A. Rouillard.

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SIERRA LEONE.

FREETOWN.—E. J. Hayford.

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INNISFAIL.—H. George.
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PETERBOROUGH.—D. Fraser.
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TORONTO.—W. H. Aikins, J. Kirkpatrick.
VANCOUVER.—D. B. Irving, G. D. Johnston.
WINNIPEG.—J. W. Good.
Ymir.—H. L. A. Keller.

NEWFOUNDLAND.

ST. JOHN'S.—F. A. Stabb.

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SAN FRANCISCO.—W. E. Ledyard.
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BERMUDA.—E. Harvey.
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T. P. Madden.
TRINIDAD.—W. F. Cleaver, R. H. E.
Knaggs, S. F. Proctor.

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G. W. A. Lynch, A. A. Montague.

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COOTAMUNDRA.—W. Hull.
GOSFORD.—S. Fielder.
GRAFTON.—M. H. Webster.
HILLGROVE.—H. M. Massey.
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RICHMOND.—W. M. Helsham.
SYDNEY.—A. A. Cohen, W. L.
Mathias, A. W. Munro, J. W. B.
Wades.

NEW ZEALAND.

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CHRISTCHURCH.—P. C. Fenwick.
HASTINGS.—R. Nairn.
NAPIER.—H. F. Bernau, A. E. Ronald.
NEW PLYMOUTH.—H. B. Leatham.
OAMARU.—S. B. Reid.
WELLINGTON.—G. E. Anson, W. Fell,
J. H. Pugh.

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 BUDERIM.—A. H. Barrow.
 CHARTERSTOWERS.—A. Vores.
 GAYNDAH.—G. Davidson.
 LONGREACH.—H. S. Lindsay.
 NORMANTON.—W. E. Roth.
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 KENSINGTON.—S. Warren.

VICTORIA.

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 OCEAN GROVE.—G. Shirres.
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 ALPIN, W. G. P. Maj. I.M.S. Bengal.
 ARCHER, S. A. Capt. R.A.M.C.
 AVETOOM, S. T. Maj. I.M.S. Bombay.
 BARKER, F. R. Maj. R.A.M.C.
 BATE, G. Surg. R.N. Retired.
 BENT, G. Maj. R.A.M.C.
 BOULGER, I. Lt.-Col. A.M.S. Retired.
 BRAKE, J. Surg.-Gen. I.M.S. Retired.
 BRAKENRIDGE, F. J. Lieut. R.A.M.C.
 BURDEN, H. Capt. I.M.S. Bengal.
 BUTTERWORTH, S. Maj. R.A.M.C.
 CALVERT, J. T. Capt. I.M.S. Bengal.
 CAMERON, C. Lt.-Col. I.M.S. Bengal.
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 CHEVERS, H. L. G. Capt. R.A.M.C.
 CHOPPING, A. Lieut. R.A.M.C.
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 Bombay.
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 COLLINGWOOD, P. H. Lieut. R.A.M.C.
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 Madras.
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 DE LOM, H. A. Capt. R.A.M.C.
 Retired.
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 DICKERSON, S. H. Brig.-Surg. A.M.
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 Retired.
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 Bengal.
 GIMLETT, T. D. Fleet-Surg. R.N.
 GOODEODY, C. M. Lieut. I.M.S.
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 GROSE, S. Staff-Surg. R.N. Retired.
 HAINES, E. Surg. R.N.
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 HALL, J. L. Maj. R.A.M.C.
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 HAYMES, H. E. Lieut. R.A.M.C.
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 ILLINGWORTH, J. A. Brig.-Surg.
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 JULIUS, H. A. Surg. R.N.
 KING, A. F. W. Capt. I.M.S.
 Bombay.
 LANCASTER, J. Lt.-Col. I.M.S.
 Madras.
 LANDON, E. Surg. A.M.S. Retired.
 LEWTAS, J. T. Lt.-Col. I.M.S.
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 LIGHTFOOT, W. S. Staff-Surg. R.N.
 LUARD, H. B. Capt. I.M.S. Bengal.
 McDONNELL, J. O'M. Lt.-Col. I.M.S.
 Bengal. Retired.
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 Gen. R.A.M.C. Retired.
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 MICHAEL, H. J. Maj. R.A.M.C.
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 MOORES, S. G. Capt. R.A.M.C.
 NAUTH, B. Capt. I.M.S. Madras.
 NORRIS, H. L. Surg. R.N.

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Retired. |
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| PRALL, C.B. Capt. I.M.S. Bengal. | TOWNSEND, H. W. W. Surg. R.N. |
| RABY, J. Maj. I.M.S. Retired. | TREVOR, H. O. Maj. R.A.M.C. |
| REILLY, C. C. Maj. R.A.M.C. | TUCKER, W. H. Lieut. I.M.S. |
| ROBINSON, G. W. Lt.-Col. R.A.M.C. | TUKE, A. W. Lieut. I.M.S. |
| ROBINSON, S. C. B. Maj. R.A.M.C. | WALKER, J. N. Lieut. I.M.S. |
| ROCK, C. H. Surg. R.N. | WHISTON, P. H. Capt. R.A.M.C. |
| ROE, E. A. H. Lt.-Col. R.A.M.C.
Retired. | WILES, J. Dep.-Surg.-Gen. R.A.M.C.
Retired. |
| RORIE, J. Dep.-Insp.-Gen. R.N.
Retired. | WILLIAMS, A. H. Lt.-Col. I.M.S.
Bengal. |
| SARKIES, S. C. Lt.-Col. I.M.S.
Madras. | WILLIAMS, P. GARNONS. Surg. R.N. |
| SINGH, B. J. Capt. I.M.S. Bengal. | WILLIS, C. F. Lt.-Col. I.M.S.
Bombay. |
| SKARDON, T. G. Brig.-Surg. I.M.S.
Bengal. Retired. | WOODHOUSE, T. P. Maj. R.A.M.C. |
| | WRIGHT, E. H. Capt. I.M.S. Madras. |
| | WYSARD, A. T. Surg. R.N. |

ALPHABETICAL LIST OF OLD STUDENTS OF ST. THOMAS'S HOSPITAL.

(The date indicates the year of entry.)

- ABBOTT, C. E. (1874).** 1, Wellington Place, Cheltenham.
- ABBOTT, F. C. (1884).** 44, Welbeck Street. B.Sc., M.B., M.S. Lond., F.R.C.S. Assist. Surg.; in charge of Ear Department, St. Thomas's Hospital; Surg. Evelina Hospital.
- w 1884-5. 1st Year Student, 1st Entrance Science Scholarship, The Wm. Titte Scholarship.
- s 1885. 1st Year Student, 1st Coll. Prize.
- w 1885-6. 2nd Year Student, The Peacock Scholarship.
- w 1886-7. 3rd Year Student, 2nd tenure of Peacock Scholarship with 1st Coll. Prize.
- w 1887-8. 4th Year Student, The Cheselden Medal; Treasurer's Gold Medal.
- H.P., H.S., A.H.S., Demonstrator of Anatomy Surgical Registrar and Resident Assistant Surgeon.
- ABEL, H. M. (1888).** 10, King's Bench Walk, Inner Temple, and 7, Nicholas Lane, City. B.A. Oxon.
- ACHARD, A. L. (1880).** 9, Blandford St., Manchester Square. M.D. Brux.
- ACKERLEY, R. (1885).** Croft House, The Hill, Surbiton, Surrey. M.A., M.B., B.Ch. Oxon.
- ACLAND, H. T. D. (1894).**
- w 1895-6. 2nd Year Student, 1st Coll. Prize.
- s 1896. 2nd Year Student, 1st Coll. Prize.
- w 1896-7. 3rd Year Student, 3rd Coll. Prize.
- s 1897. 3rd Year Student, 2nd Coll. Prize.
- w 1898-9. 5th Year Student, The Cheselden Medal.
- H.S., A.H.S., Clin. Assist. Ear Dept.
- ACLAND, J. M. (1889).** 22, Chichele Road, Cricklewood.
- ACLAND, T. D. (1876).** 19, Bryanston Square. M.A., M.D. Oxon.; F.R.C.P. Lond.; Physician, St. Thomas's Hospital; Physician, Brompton Hospital.
- w 1877-8. 3rd Year Physical Society's Prize. Paper published in Hospital Reports, Vol. VIII.
- w 1878-9. 4th Year Student, Mead Medal. Demonstr. of Pract. Med., Morb. Histol. and Pract. Physiol., H.S., H.P., R.A.
- ADAMS, A. J. B. (1885).** Springwell, Barnes.
- ADAMS, E. J. (1863).** Birch Grove, Manchester Road, Broom Hill, Sheffield.
- ADAMS, F. (1877).** 32, Trinity Square, Newington.
- ADDISON, C. J. (1872).** Major, R.A.M.C.
- ADDY, B. (1868).** Stretton, Weld Road, Birkdale, Southport. M.D. Lond.
1869. 1st Year Student, 1st Coll. Prize; Physical Society's 1st Year's Prize.
1870. 2nd Year Student, 1st Coll. Prize; Physical Society's 2nd Year's Prize.
1871. 3rd Year Student, 1st Coll. Prize; Prosector's Prize; Treasurer's Gold Medal.
- R.A., H.P.
- ADKINS, A. J. (1884).** Park Hospital, Hither Green. M.D. Lond. D.P.H. Camb.
- Clin. Asst. Skin Dept.
- ADKINS, P. R. (1888).** 39, Upper Rock Gardens, Brighton. M.D., B.S. Durham.
- ADYE, W. J. A. (1880).** Church House, Bradford-on-Avon, Wilts.
- AHLSWEDE, O. J. L. (1897).** 224, Mare St., Hackney. M.D. Freiburg.
- AIKINS, W. H. B. (1881).** 50, College Street, Toronto, Canada. M.D., C.M.
- AIR, A. C. (1863).** 223, Selhurst Road, South Norwood.
- ALCOCK, G. H. (1891).** Pinchbeck, Spalding, Lincs.
- ALFORD, H. T. M. (1892).** The Hospital, Weston-Super-Mare. Obst. H.P.
- ALLCOCK, G. (1892).** Thornvale, Penns Lane, Erdington, nr. Birmingham.
- ALLDEN, S. J. (1890).** 32, West Allington, Bridgport. M.D., B.S. Durham.
- ALLEN, W. H. (1890).** Stuart Villa, Harrington Street, Derby. B.A., M.B., B.C. Cantab.
- ALLFREY, F. H. (1895).** Newport Pagnell, Bucks. M.A., M.B., B.C. Cantab.
- Clin. Assist. Ear Dept.

- ALLINGHAM, W.** (1851). 59, Marina, St. Leonards-on-Sea. F.R.C.S.
 1854. Descriptive Anatomy, Prize ;
 Surgery, Prize.
 1855. Medicine, Prize ;
 Clinical Medicine, President's Prize
 Clinical Medicine, Treasurer's Prize.
 Surgical Tutor, Demonstrator of Anatomy,
 and Surgical Registrar.
- ALLIOTT, A. J.** (1869). The Vine, Sevenoaks, Kent. B.A., M.D. Cantab.
- ALLPORT, R. H.** (1893). Lambeth Infirmary, Brook Street.
- ALPIN, W. G. P.** (1877). Maj. I.M.S., Bengal. M.D. Brux.
 Demonst. of Pract. Surg.
- AMBROSE, W. C.** (1895). The Woodlands, Barnt Green, Worc. B.A. Cantab.
 Clin. Asst. Throat Dept.
- ANDERSON, G. R.** (1883). 18, Hoghton Street, Southport. F.R.C.S.
 R.A., A.H.P
- ANDERSON, J. R.** (1883).
- ANDERSON, M. J. B.** (1889). 120, Lavender Hill.
- ANDERSON, W.** (1864). 1, Harley Street, and Moor Edge, Walton on the Hill. F.R.C.S.; Surgeon, Lect. on Surgery; in charge of Skin Dept., St. Thomas's Hospital; Professor of Anatomy to the Royal Academy, Member of the Court of Examiners at the Royal College of Surgeons; Exam. in Surg. Univ. Lond., and Conjoint Board.
 1865. 1st Year Student, 3rd Coll. Prize.
 1866. 2nd Year Student, 3rd Coll. Prize.
 1867. 3rd Year Student, 1st Coll. Prize ;
 Physical Society's 3rd Year's Prize ;
 Cheselden Medal.
 Surg. Registr., Demonstrator of Anatomy, Lecturer on Anatomy.
 H.S., R.A.
- ANDRÉ, J. E. F.** (1886). The Gorse, Sidlesham, Chichester.
- ANDREW, H.** (1884). 10, East Southernhay, Exeter.
- ANDREWS, C. H.** (1880). Willow Lane, Norwich.
- ANDREWS, R.** (1879). Chestnut Grove, New Malden, Surrey.
- ANNESLEY, W. O. T.** (1871). Mill St., Ottery St. Mary, Devon.
- ANNESS, F. R.** (1877). Glenhurst, London Road, Ipswich.
- ANSON, G. E.** (1886). The Terrace, Wellington, New Zealand. M.D., B.C. Cantab.
 H.S., A.H.S., R.A.
- ANTHONY, T. G.** (1842). Tredegar, Monmouthshire.
- APPLETON, G.** (1842). Park Braws, Lizard, Helston, Cornwall (retired).
- APPLETON, H.** (1838). 21, Elmdale Road, Tyndall's Park, Bristol (retired). M.D. Aberd.
- APPLEYARD, F. E.** (1891). Umtali, Mashonaland. B.A., M.B., B.C., Cantab.
 Clin. Asst. Throat Dept.
- ARCHER, S. A.** (1893). Capt., R.A.M.C.
- ARKLE, A. S.** (1894). Holly Mount, West Derby, Liverpool.
- ARMSTRONG, H. G.** (1871). Wellington College. Berks.
 w 1874. 3rd Year Student, 3rd Coll. Prize.
- ARNISON, W. D.** (1887). 2, Saville Place, Newcastle-on-Tyne. M.D., B.S. Durham.
- ARNOLD, E. G. E.** (1888). M.R.C.P. Lond., M.B., B.S., Durh.
 Obst. H.P.
- ARNOLD, G. J.** (1888). The Towers, Torquay. F.R.C.S. Late Surg. P. & O.
 H.S., A.H.S., Clin. Asst. Throat & X-Ray Depts.
- ASH, J.** (1892). Medina Villa, Elphinstone Road, Southsea.
- ASHE, W. P.** (1872). 17, Alexander Square. M.D. Durh.
- ASHFORD, W.** (1890).
- ATKEY, P. J.** (1885). 46, Bellevue Road, Southampton. D.P.H. Camb.
 Late Surg. P. & O.
 H.S., A.H.S., Clin. Asst. Throat, Ear and Skin Depts.
- ATKINSON, A. E.** (1894). 3, Southampton Street, Strand. D.P.H.
- ATKINSON, F. P.** (1860). Claremont Road, Surbiton, Surrey. M.D., C.M., Aberd. ; M.R.C.P. Edin.
- AUBIN, T. J.** (1854). 39, La Motte Street, St. Helier's, Jersey. M.D. St. And.

- AVELING, C. T. (1862). Cedar House, 136, Stamford Hill. M.D., M.S. Lond.; F.R.C.S.
- w 1863. Matriculation Examination — Physics and Natural History, 1st Coll. Prize;
1st Year Student, 1st Coll. Prize.
1864. 2nd Year Student, 2nd Coll. Prize.
1865. 3rd Year Student, 3rd Coll. Prize. H.S.
- AVETOON, S. T. (1876). Maj., I.M.S., Bombay.
- BABINGTON, S. N. (1892). Church Missionary Hospital, Hangchow, China.
s 1894. 2nd Year Student, 1st Coll. Prize. A.H.S., H.S., Ophth. H.S.
- BAIN, W. (1896). Straythorpe, York Place, Harrogate. M.D. Durh., M.R.C.P. Lond., F.R.C.S. Edin.
- BAKER, A. (1891). 25, Falkner Street, Liverpool. M.D., B.S. Durham.
- BAKER, H. W. (1880). 152, Westbourne Grove.
- BALLANCE, C. A. (1875). 106, Harley St., Cavendish Square. M.B., M.S. Lond.; F.R.C.S.; Assistant Surgeon, and Teacher of Practical and Operative Surgery, St. Thomas's Hospital, Assistant Surgeon to the Hospital for Sick Children, Great Ormond St.; Surg. National Hosp., Queen Square.
w 1876-7. 3rd Year Student, 3rd Coll. Prize, and Physical Society's 3rd Year's Prize.
1880. The Solly Medal and Prize. Surgical Registrar, Demonstrator of Anatomy. H.P., H.S., A.H.S., A.H.P., R.A.
- BALLANCE, J. DES C. (1881). 155, Hagley Road, Edgbaston, Birmingham.
R.A.
- BANHAM, Rev. H. F. (1870). Tuddenham Vicarage, Ipswich (retired). M.A., M.D. Cantab.
- BANHAM, W. W. (1882). 147, Abbeydale Road, Sheffield.
- BANKS, A. (1887). West Hill Tower, Ryde, Isle of Wight F.R.C.S., D.P.H.
w 1887-8. 1st Year Student, 1st Coll. Prize.
s 1890. 3rd Year Student, 2nd Coll. Prize.
w 1890-1. 4th Year Student, The Cheseleden Medal. H.S., A.H.S., Asst. Demonstr. of Pract. Surg., Clin. Asst. Skin Dept., Jun. and Sen. Obst. H.P.
- BARBER, H. V. (1878). Tenterden, Kent. M.A. Cantab.
- BARKER, E. M. (1892). 33, Marina, St. Leonard's-on-Sea. M.A., M.B., B.C. Cantab.
- BARKER, F. (1884). Heighington, Linc.
- BARKER, F.R. (1872). Maj., R.A.M.C. M.B. Lond., D.P.H. Camb.
- BARNES, A. R. (1869). 9, Palmeira Avenue, Hove, Sussex. M.D. Edin.
- BARNES, J. A. (1893). H.S., A.H.S.
- BARNES, J. S. (1891). Boro' Asylum, Portsmouth.
- BARNES, R. Conservative Club, and Bernersmede, Eastbourne (retired) M.D., F.R.C.P. Lond.; Lum. Lect.; Censor; F.R.C.S.; F.R.C.P.I. (Hon.). Formerly Obst. Phys. and Lect. on Obst., Lond., St. Thos. and St. Geo. Hosps., and Exam. Univ. Lond., R.C.P. Lond., and R.C.S. Eng.
- BARNES, R. S. F. (1870). 12, Welbeck Street, M.D., C.M., Aberd.; M.R.C.P. Lond., F.R.S.E. Sen. Phys. Roy. Matern. Charity.
- BARNETT, H. (1883). Burway House, Church Stretton, Salop. M.A., M.B., B.C. Cantab.
- BARON, T. (1863). Ulceby, Linc. H.S.
- BARRACLOUGH, H. C. (1891). London Road South, Lowestoft. B.A., M.B., B.C. Cantab.
- BARRET, E. E. 12, Avenue de la Grande Armee, Paris, France. M.D. Brux., M.D. Paris.
- BARRETT, J. J. (1859). 170, Ramsden Road, Balham. M.D. St. And.
- BARROW, A. H. (1865). Budgerim Mountain, N.C. Ry. Queensland.
- BARRS, J. H. (1885). 6, Wandsworth Bridge Road, Fulham.
- BARTON, P. F. (1894). 1, Sunnyside, Wimbledon. B.A., M.B., B.C. Cantab.
- BARWELL, R. (1845). 55, Wimpole Street, Cavendish Square. F.R.C.S.; Consulting Surgeon to Charing Cross Hospital.
1850. Clinical Medicine, Prize. H.S., Demonst. of Anat.
- BASHALL, C. E. (1884). Park View House, Kimberley Road, Falmouth.
- BATE, G. (1871). 31, Linden Gardens, Chiswick. Late Surg. R.N.
- BATHURST, L. (1881). Ellesmere, Salop.

- BATTLE, W. H. (1873). 49, Harley Street, Cavendish Square. F.R.C.S., Asst. Surgeon and Teacher of Practical and Operative Surgery, St. Thomas's Hospital and Surgeon Royal Free Hospital.
w 1875. 2nd Year Student, 3rd Coll. Prize.
w 1876-7. 3rd Year Student. The First Solly Medal and Prize.
Resident Assistant Surgeon, Surgical Registrar, H.S., H.P., A.H.P., R.A.
- BATTYE, J. H. (1872). 84, Belgrave Road. M.D.R.U.I.
A.H.P.
- BAWTREE, F. (1893). Scarborough Hospital and Dispensary.
- BAXTER, S. E. (1885). Wollaston, Wellingborough.
- BAYLISS, R. A. (1884). 26, Gay Street, Bath.
- BEALE, H. R. (1892). 27, Sisters Avenue, Battersea.
w 1894-5. 1st Year Student, 2nd Entrance Science Scholarship, 1st Coll. Prize.
H.P., A.H.P. Clin. Assist. Skin Dept.
- BEARDSLEY, A. (1843). The Towers, Grange-over-Sands, Lanc.
- BEDDARD, W. O. (1890).
- BEDDOES, T. P. (1882). B.A., M.B. B.C. Cantab.; F.R.C.S.
Clin. Asst. Skin Dept.
- BEDFORD, C. F. (1864). New Sleaford, Linc.
- BEDFORD, R.J. (1855). Kegworth, Leic.
R.A.
- BELFRAGE, S.H. (1896). 2, Montagu Place, Portman Square. M.B., Lond.
Obst., H.P., Clin. Assist. Ear and Elect. Depts.
- BELL, C. W. J. (1878). 61, Upgate, Louth, Linc.
- BELL, E. S. (1883). Asst. Med. Off. St. Olave's Union Infirmary, Lower Road, Rotherhithe. M.D., Brux.
- BELL, J. A. (1865). Deravona, Watts' Avenue, Rochester, Kent.
H.S., R.A.
- BELL, J.V. (1858). Star Hill, Rochester, Kent. M.D. St. And., F.R.C.S.
H.S., R.A.
- BELL, R. H. (1895). 1, Stafford Terrace, Campden Hill, Kensington. M.A., M.B., B.C. Cantab.
H.P., Obst., H.P.
- BENINGTON, R. C. (1872). Perth, Western Australia. M.D., B.S., L.S.Sc. Durh.
H.P., A.H.P., R.A.
- BENNETT, A. W. 6, Park Village East, Regent's Park. M.A., B.Sc. Lond. Lecturer on Botany.
- BENNETT, H. S. (1868). 53, Upper Berkeley Street, Portman Square, and So, Lombard Street. M.B. Cantab.
R.A.
- BENNETT, W. G. (1892). Lowesmoore Villa, Worcester. LL.B. Lond.
- BENSLEY, E. C. (1858). 127, Fellows Road, South Hampstead. F.R.C.S.
- BENSON, G.V. (1888). Lewes, Sussex, M.A. Cantab.
- BENSUSAN, A. D. (1887). M.D. Brux.
- BENT, G. (1879). Major R.A.M.C.
- BENTHALL, W. (1877). 102, Friar Gate, Derby. M.A., M.B. Cantab.
- BERNAU, H. F. (1885). Napier, New Zealand.
Clin. Asst. Throat Dept.
- BERNAVS, A. V. (1875). Solihull, Warw. B.A., M.B. Cantab.
w 1880-1. 3rd Year Student, 1st Coll. Prize.
- BERNAYS, H. L. (1871). Rivoli, Old Charlton, Kent.
w 1873. Prosector's Prize.
- BERNAYS, S. A. (1870). Church House, 185, St. Leonard's Road, South Bromley.
Ophth. Clin. Assist.
- BERRIDGE, W. R. M. (1884). Enderby, near Leicester.
- BEVAN, A. (1894). 50, Elm Park Gardens, Chelsea.
1898. The Sutton Sams Memorial Prize.
H.P., A.H.P., Obst. H.P. Clin. Assist. in Elect. Dept.
- BEVILLE, F. W. (1884).
Clin. Asst. Skin Dept.
- BIBBY, J. (1876). Withy House, Bamber Bridge, Lanc.
- BICKLE, L. W. (1877). North Terrace, Adelaide, S. Australia. F.R.C.S. Edin.
- s 1878. 1st Year Student, 3rd Coll. Prize.
s 1879. 2nd Year Student, 1st Coll. Prize.
H.P.

- BIDDLE, D. (1859). Charlton Lodge, Kingston-on-Thames.
1860. 1st Year Student, Treasurer's Prize; Matriculation Exam., Prize. H.S.
- BIDWELL, L. A. (1882). 59, Wimpole Street, Cavendish Square. F.R.C.S. Sen. Asst. Surg. W. Lond. Hosp. H.S., A.H.S.
- BIGGAM, W. (1886). 15, The Oaks, Sunderland. M.A., M.B. Durh.
- BIGGER, W. G. (1883). Aberfoyle, Streatham Common. B.A.R.U.I., M.B., M.Ch.
- BILLSON, C. (1887). 28, Hornsey Pk. Rd.
- BINCKES, F. W. (1891). Hill Side, Overhill Road, East Dulwich. Clin. Assist. Electrical Dept.
- BINGHAM, F. M. (1893). Alfreton, Derbyshire.
- BINGHAM, S. O. (1892). Alfreton, Derbyshire.
w 1897-8. 5th Year Student. The Cheselden Medal. H.S., A.H.S.
- BIRD, A. C. (1891). Clin. Assist. Ear Dept.
- BIRD, G. W. H. (1890). 6, King St., Bridgwater, Som. B.A., M.B., B.C. Cantab.
H.P., Clin. Asst. Skin Dept.
- BIRD, W. V. (1870). 7, The Avenue, St. Margaret's, Twickenham (retired). M.D. Aberd., M.R.C.P.
- BLABER, P. L. (1890). Sunnybank, Shoot-up-Hill, Brondesbury. Obst. H.P., Clin. Assist. Throat Depart.
- BLACK, G. (1894). 104, Beulah Hill, Upper Norwood. Clin. Assist. Skin Dept.
- BLACK, J. (1870). The Avenue, Beulah Hill, Norwood. B.A., M.B. Cantab., F.R.C.S., Lect. on Anat. Westm. Hosp. w 1872. 2nd Year Student. Prosector's Prize. H.S.
- BLACKER, A. B. (1879). 16, West Halkin Street, Belgrave Square. M.D., B.S. Durh. Supt. of the X Ray Dept. St. Thomas's Hospital; Tel.: Sciomancy. Clin. Asst. Ear, Throat and Electrical Depts.
- BLADES, C. C. (1853). 182, Clapham Road. M.D. St. And.
- BLAIKIE, A. B. (1885). Oswestry, Salop. M.A., M.B., B.C. Cantab.
- BLAIR, C. S. (1889). Fulwood, Kew Gardens, Surrey. M.D. Durh., F.R.C.S.
- BLAKE, T. W. (1857). Hurstbourne, Bournemouth, Hants. M.D. St. And.
- BLAKEMAN, C. J. (1885). Res. Med. Off., City Hosp., South Grafton Street, Liverpool.
- BLAKISTON, F. C. (1892). Wandsworth Union Infy., St. John's Hill.
- BLOUNT, G. B. C. (1889). 2, Riverbank, East Molesey. Clin. Asst. Ear and Electr. Dept.
- BLUNSMON, J. (1873).
- BLUNT, A. H. (1884). 133, King Richard's Road, Leicester.
- BODINGTON, G. F. (1885). Provincial Asyl., New Westminster, British Columbia. M.D. Durh.; M.R.C.P. Lond., F.R.C.S.
- BOND, B. W. (1886). Glenside, Peper Harrow Rd., Godalming. M.B., B.S. Durh.
- BOND, C. K. (1879). D.P.H.
- BOND, W. A. (1884). Holborn Town Hall. M.A., M.D., B.C., D.P.H. Cantab., M.R.C.P.
R.A., Clin. Asst. Throat Dept.
- BOOTH, E. J. H. (1865).
- BOOTH, J. W. (1863). Hartford, Connecticut, U.S.A.
- BOSTOCK, L. (1891).
- BOTT, W. G. (1871). 37, Kennington Park Road. J.P.
- BOUCK, J. A. (1887). 447, Battersea Park Rd.
- BOULGER, I. (1869). Stawell House, Church Road, Forest Hill. Lt.-Col., A.M.S. (retired).
1870. 1st Year Student, Sir Wm. Tite's Scholarship.
1871. 2nd Year, Sir Wm. Tite's Scholarship.
w 1872. 3rd Year, Sir Wm. Tite's Scholarship.
H.S., R.A.
- BOURDAS, E. C. (1894). Dunoon House, Clapham Common.
H.S., A.H.S., Clin. Assist. Throat and Ear Depts.
- BOWEN, R. E. A. (1874). 285, Cambridge Road, Bethnal Green.
- BOWRING, W. A. (1887). 38, Montpelier Crescent, Brighton. F.R.C.S.
H.P., Jun. and Sen. Obst. H.P.

- BOX, C. R. (1884). 2, Devonshire Place, Portland Place. M.D., B.S., B.Sc. Lond., M.R.C.P., F.R.C.S., Assist. Physician; in charge of Children's Dept., Teacher of Pract. Med., Jun. Dem. of Anatomy, St. Thomas's Hosp., Asst. Phys. Lond. Fever Hospital.
w 1885-6. 1st Year Student, 2nd Coll. Prize. H.S., A.H.S., Res. H.P., Clin. Asst. Ear Dept., Medical Registrar, Demonstr. of Practical Medicine, and Resident Asst. Physician.
- BOYCOTT, A. N. (1884). Med. Sup. Herts Asyl. Hill End, St. Albans. M.D. Lond.
H.S., A.H.S., R.A., Clin. Asst. Skin Dept.
- BOYS, A. H. (1871). Chequer Lawn, St. Albans, Herts.
- BRACEY, H. R. (1870). 115, Bristol Road, Edgbaston, Birmingham.
- BRADDON, C. H. (1857). Ryecroft House, Cheetham Hill, Manchester. M.D. St. And., J.P.
R.A.
- BRAIDWOOD, T. L. (1888). Adderstone Lodge, St. Margarets, Twickenham.
- BRAKE, J. (1850). 1, St. Leonards Road, Ealing. Surg.-Gen. I.M.S. (retired).
1851. 1st Year Student, Scholarship.
1852. 2nd Year, Student, Scholarship. Physiology, Prize.
1853. 3rd Year Student, Scholarship. Clin. Med., Treasurer's Prize. Midwifery, Prize.
Forensic Medicine, Prize.
- BRAKENRIDGE, F. J. (1889). Lt. R.A.M.C., D.P.H., Camb.
H.P., Clin. Assist. Elect. Dept.
- BRETON, L. M. (1888). Glendale, Portswood Road, Southampton.
- BRISLEY, C. W. (1884). 92, London Road, St. Leonard's-on-Sea.
- BRISTOW, G. H. (1884). F.R.C.S.I., M.D. Brux.
Clin. Asst. Throat and Ear Depts.
- BRISTOWE, H. C. (1882). Wrington, Somerset. M.D. Lond.
H.P., Ophth. H.S., A.H.S.
- BROCK, C. DE L. (1871). Alstone Lawn, Tooting Graveney.
- BROCK, J. (1871). 28, Wilbury Road, Hove.
- BROCKATT, A. A. (1881). Hazeldean, Malvern, Worc. M.D. Brux.
R.A., H.P., Clin. Asst. Skin, Throat and Ear Depts.
- BROCKWAY, A. B. (1881). Brisbane, Queensland.
- BRODIE, T. Gregor. (1895). Lindfield, Uxbridge Road, Surbiton. M.D. Director of Research Laboratories Examination Hall. Examiner in Physiology for the Fellowship R.C.S., late Lect. on Physiology, St. Thomas's Hospital.
- BROMET, E. (1889). Earlswood, Redhill. M.A. Cantab.
- BROOK, H. D. (1881). Fareham, Hants. D.P.H.
- BROOK, W. F. (1881). Longland House, Swansea. F.R.C.S.
H.S., A.H.S., Clin. Asst. Ear, Skin and Throat Depts.
- BROOKS, C. (1885). Gold Hill, Gerrard's Cross, Bucks.
- BROWN, F. G. (1859). 17, Finsbury Circus.
1861. 2nd Year Student, 3rd Coll. Prize.
1862. 3rd Year Student, 3rd Coll. Prize.
- BROWN, G. W. (1890). 10, Westminster Bridge Road.
- BROWN, L. D. (1878). Henley Villa, Ealing.
- BROWN, T. H. (1894). Skopelos, Hunstanton, Norfolk. M.A., M.B., B.C. Cantab.
- BROWNE, E. A. (1863). 39, Rodney St., Liverpool. F.R.C.S. Edin. Lect. on Ophth. Univ. Coll. Liverpool.
- BROWNE, E. W. (1893).
- BROWNING, P. R. (1890). Cambra House, Totton, Hants.
- BRUCE, R. M. (1877). Med. Superint., West. Hosp., Seagrave Rd., Fulham.
- BRYAN, F. (1879). Horton Manor Asyl., Banstead Downs.
- BUCKLEY, T. W. (1877). Thrapston House, Thrapston, Northants.
- BULL, H. A. (1890). The Manor House, Great Haywood, Stafford.
- BULLEN, F. St. J. (1880). 12, Pembroke Road, Clifton, Bristol.
- BULLOCK, H. M. (1879). Parklands, Bradinch, Devon.
- BULSTRODE, H. T. (1881). 4, The Mansions, Earl's Court, and Local Govt. Bd., Whitehall. M.A., M.D., B.C. Camb., D.P.H.
H.P., A.H.P., Clin. Asst. Throat, Skin and Ear Depts.
- BURD, G. V. (1873). Okehampton, Devon.

- BURDEN, H. (1886). Capt. I.M.S. Bengal. F.R.C.S.
w 1886-7 1st Year Student, The William Tite Scholarship.
- s 1887. 1st Year Student, 2nd Coll. Prize.
w 1887-8. 2nd Year Student, 2nd Coll. Prize.
H.S., A.H.S.
- BURFIELD, T. (1897). Sandbanks, Hailsham, Sussex. B.A., M.B., B.C. Cantab.
- BURTON, C. F. (1885). 1, Crescent Place, Whitby, Yorks.
- BURY, A. T. (1870). Sheen, Ashbourne, Derbyshire.
- BURY, G. W. F. (1853). Chew Magna, Somers. F.R.C.S.
- BUTLER, G. R. (1877).
- BUTTERWORTH, S. (1878). Maj., R.A.M.C.
- BUZZARD, E. F. (1894). 137, Bedford Court Mansions, Bedford Square. M.A., M.B., B.Ch. Oxon.; M.R.C.P. Lond.
w 1897-8. 5th Year Student, the Mead Medal. H.P.
- BYERS, D. W. (1845). 1, Summerhill Road, Maindee, Newport, Mon.
- BYHAM, W. L. (1879). Woodlands, Sunbury-on-Thames.
- CADE, H. L. (1880). Albert Villa, 2, Queen's Road, Peckham.
- CAIGER, F. F. (1878). Med. Superint. S.W. Fever Hosp., Stockwell. M.D., B.S., F.R.C.P., Lond.; D.P.H. Cantab.
w 1879-80. 1st Year Student, 3rd Coll. Prize.
w 1880-1. 2nd Year Student, 3rd Coll. Prize.
w 1882-3. 4th Year, the Mead Medal. H.S., A.H.S., H.P., A.H.P., R.A.
- CALVERT, J. T. (1882). Capt. I.M.S. Bengal. M.B. Lond.; D.P.H. H.P., H.S., A.H.S.
- CALWELL, W. (1884). 1, College Square North, Belfast. M.A., M.D., M.Ch., R.U.I.
- CAMERON, C. (1858). Lt.-Col., I.M.S. Bengal (retired).
- CAMERON, C. H. H. (1871). Kolassy House, Old Town, Eastbourne. D.P.H. Camb. R.A.
- CAMERON, W. J. (1890). 64, Welbeck Street, Cavendish Sq. M.B. Lond.
- CAMPBELL, A. J. (1888). 74, Barcombe Avenue, Streatham Hill.
- CAMPBELL, A. M. (1888). M.B., B.Ch., Oxon.
- CANDLER, G. (1891). Harleston, Norfolk. B.A. Cantab. Obst. H.P.
- CANN, R. T. (1880). 3, Marine Terrace, Fowey, Cornwall.
s 1882. 2nd Year Student, 1st Coll. Prize.
s 1883. 3rd Year Student, 2nd Coll. Prize.
- CANNOCK, C. W. (1873).
- CAPORN, A. W. (1885).
- CARPENTER, A. B. (1876). Wykeham House, Bedford Park, Croydon, Surrey. M.A., M.B. Oxon. H.P., A.H.P., H.S.
- CARPENTER, E. (1861). Trevathan, Albemarle Road, Beckenham, Kent.
- CARPENTER, G. (1878). 12, Welbeck Street, Cavendish Square. M.D. Lond.; M.R.C.P. Phy. to Out-Patients, Evelina Hospital.
w 1880-1. 1st Year Student, 3rd Coll. Prize.
s 1881. 1st Coll. Prize.
w 1881-2. 2nd Year Student, 3rd Coll. Prize; Prosector's Prize.
- CARPENTER, J. W. (1853). Winchet Hill, Goudhurst, Kent. M.D. St. And.
- CARR-WHITE, P. (1889). Capt. I.M.S. Madras. M.B., C.M. Edin.
- CARSTAIRS, H. J. (1884). Chiswell Lodge, Worcester Park, Surrey. Clin. Asst. Throat Dept.
- CARTER, A. W. (1889). Ladybrand, Orange Free State, M.B., C.M. Edin.
- CARTER, W. (1863). 78, Rodney Street, Liverpool. M.D., B.Sc., LL.B., F.R.C.P. Lond.; F.R.C.S.I.; J.P.
- CARTER, W. R. (1886). 23, Jury St., Warwick. M.A., M.B., B.C. Cantab. R.A., S.O.C.
- CARVER, J. R. (1890). The Meadows, Alderley Edge, Cheshire. B.A., M.D., B.C., D.P.H. Cantab.
Clin. Asst. Skin Dept.
- CASTLE, H. (1874). 99, The Mall, Newport, I.W. M.B. Lond.
w 1874-5. 1st Year Student, 2nd Coll. Prize.
s 1875. 3rd College Prize.
w 1876-7. Physical Society's 3rd Year's Prize.
H.S., A.H.S., R.A.
- CAUDLE, A. W. W. (1856). Henfield, Sussex.
1858. Clinical Medicine, Prize.
- CAUDWELL, E. (1886). Harleston, Norfolk.
- CAVE-BROWN-CAVE, H. W. (1891). Lifford Hall, King's Norton, Worc.
- CHAFFERS, E. (1860). Broomfield, Keighley, Yorks. F.R.C.S. J.P.

- CHALDECOTT, C. W. (1848). Parkside, Dorking, Surrey.
 1849. Materia Medica, 2nd Prize ; 1st Year Student, Scholarship.
 1850. Surgery, Prize.
 1851. Physiology, Prize ; Physical Society's Essay, Treasurer's Prize ; General Proficiency, Treasurer's Silver Medal.
- CHALDECOTT, J. H. (1880). 2, Lancaster Road, Hampstead.
- CHAMBERS, J. M. (1891). Craigside, Llandudno.
- CHANCE, R. F. (1887). 22, Carlton Crescent, Southampton. Obst. H.P.
- CHAPMAN, G. W. (1884). Idaho, Edgar Road, Cliftonville, Margate.
- CHARLES, J. R. (1895). Pelsall Hall, Walsall, Staffs. B.A., M.B., B.C. Cantab. M.R.C.P. Lond. H.P.
- CHARPENTIER, A. (1879). Rathmines House, Uxbridge, Middlesex. M.D. Durh.
 1882-3. 4th Year, The Mead Medal Exam., Special Mention.
- CHARSLEY, R. S. (1888). The Barn, Slough, Bucks. B.A. Oxon.
- CHAUDHURI, S. N. (1896). 76, Lower Circular Road, Calcutta.
- CHEVALLIER, C. L. (1889). 77, Park Ridings, Wood Green.
- CHEVERS, H. L. G. (1879). Capt. R.A.M.C.
- CHILD, G. A. (1891). Church View, Hythe, Southampton.
- CHISHOLM, M. (1885). Halifax, Nova Scotia, Canada.
- CHOPPING, A. (1890). Lt. R.A.M.C.
- CHRISTIE, F. (1886).
- CHURCHILL, F. (1867). 4, Cranley Gardens, Queen's Gate. M.D., C.M. Edin. ; F.R.C.S. Surg. Registr.
- CLAPTON, E. (1850). 41, Eltham Rd. Lee. M.D., F.R.C.P., F.R.C.S.
 1851. 1st Year Student, 1st Scholarship ; Descriptive Anatomy Prize ; Chemistry, Prize.
 1852. 2nd Year Student, Scholarship ; Physiology, Prize ; Materia Medica, Prize ; Botany, Prize.
 1853. 3rd Year Student, Scholarship ; Clinical Medicine, Treasurer's Prize ; Physical Society's Essay, Treasurer's Prize.
 1854. Ophthalmic Reports, Governor's Prize ; Clinical Medicine, Mr. N. Smith's Prize.
 Physician and Lecturer on Materia Medica.
- CLAPTON, W. (1854). 27, Queen Street, Cheapside. F.R.C.S.
 1855. Materia Medica, Prize.
 1856. Clinical Medicine, Prize.
- CLARK, F. (1868). Crosby House, Gt. St. Helens, Bishopsgate.
- CLARK, H. J. (1887). High Street, Swanage, Dorset.
- CLARKE, A. (1855). Stock, Ingateshaw, Essex.
- CLARKE, A. W. V. (1890). 5, Selhurst Road, South Norwood.
- CLARKE, H. H. R. (1894). Essendene, The Downs, Wimbledon. Obst. H.P.
- CLARKE, J. M. (1884). 28, Pembroke Road, Clifton, Bristol. M.A., M.D. Cantab., F.R.C.P. Physn. and Pathol. Bristol Gen. Hosp., Prof. of Path. Bristol Med. Sch. H.P.
- CLARKE, J. T. (1884)
- CLARKSON, F. C. (1880). Maj. I.M.S. Bengal.
- CLARKSON, J. W. (1870). Lt.-Col. I.M.S. Bombay. H.P., H.S.
- CLEAVER, W. F. (1879). Clarence Street, Port of Spain, Trinidad.
- CLEGHORN, G. (1868). Blenheim, Marlborough, New Zealand. M.D. Durh. H.S.
- CLEMENTS, W. H. (1879).
- CLEVE, R. P., Constitutional Club, Northumberland Avenue.
- CLIFTON, G. (1866). 48, London Road, and 7, Bowling Green Street, Leicester. J.P.
- CLOWES, J. P. (1884). Asst. Med. Off. Co. Asyl., Prestwich, Manchester.
- CLUTTON, H. H. (1872). 2, Portland Pl. M.A., M.B., M.C. Cantab. ; F.R.C.S. Surgeon, St. Thomas's Hospital. Joint Lect. on Surgery, Res. Asst. Surg., Surg. Reg., H.S.
- COAD, J. E. (1886). Surg. R.N. M.B. Durh.
- COATES, W. H. (1868). Hucknall Torkard, Notts.
- COBB, E. H. (1891). Belmont, Stevenage, Herts. H.S., A.H.S., Clin. Asst. Skin Dept.
- COBBETT, L. (1886). 2, Round Church Street, Cambridge. M.A., M.D. Cantab. ; F.R.C.S. ; late Demonstr. of Pathol. Univ. Camb. H.S., A.H.S., H.P.
- COCKELL, F. E., Jun. (1872). Holly Lodge, Forest Road, Dalston. Merchant Taylors' Scholar.

- COGILL, H. (1886).
 COHEN, A. A. (1877). 61, Darlinghurst Road, Sydney, N.S. Wales. M.D. Aberd.
 COLBY, G. (1857). Brawby Park, Pickering, Yorks.
 COLBY, W. T. (1848). The Mount, Malton, Yorks. M.D. St. And.; J.P.
 COLEMAN, P. (1884). Riemoore Lodge, Clacton-on-Sea. M.B., B.S. Durh.
 COLLCUTT, A.M. (1886). 2, St. Peter's Place, Brighton. M.A., M.B., B.C. Cantab.
 H.P. Clin. Asst. Ear Dept.
 COLLIER, H. (1882). 21, South Quay, Gt. Yarmouth. M.D. Brux.
 COLLIER, M. P. M. (1874). 133, Harley St., Cavendish Sq. M.S., M.B. Lond.; F.R.C.S. H.S., A.H.S., A.H.P.
 COLLIER, S. R. (1889). Somers, Wimbledon Hill, Wimbledon. M.D., M.Ch. R.U.I.
 COLLIER, W. A. (1892). 36, Gt. Smith St., Westminster.
 COLLINGWOOD, P. H. (1889). Lt. R.A.M.C.
 COLLIS, E. L. (1893). Stourcote, Stourbridge. B.A., M.B., B.Ch. Oxon.
 w. 1-5-6. Bristowe Medal.
 Obst. H.P.
 COLMAN, G. M. H. (1877). Maj. R.A.M.C. (retired). M.A., M.B. Cantab.
 COLMAN, W. S., 22, Wimpole Street. M.D. Lond., F.R.C.P. Asst. Physn. Demonstr. of Morbid Anatomy; Lecturer on Forensic Med., Teacher of Pract. Med., St. Thomas's Hosp.
 COLSTON, J. (1855). 189, Mill Road, Cambridge.
 CONFORD, G. J. (1892). Sancroft, Bath Road, Felixstowe. B.A., M.B., B.Ch. Oxon.
 H.P., H.S., A.H.S., Clin. Asst. Elect. Dept.
 CONNER, J. R. T. (1888). 413, Kingsland Road. B.A.R.U.I., M.D., M.Ch.
 COOK, P. I. (1873). Byfield, 5, High St., Bromley, Kent. M.D. Brux.
 COOK, R. (1864). Leiston, Suffolk. M.D. Glasg.
 COOK, S. B. (1882). Askam-in-Furness, Lancs. B.A., Cape of Good Hope; M.D. Lond.
 s 1883. 1st Year Student, 2nd Coll. Prize. A.H.S., A.H.P., Clin. Asst. Skin Dept.
 COOK, T. D. (1880). Glendon, Torquay. M.B., C.M. Glasg.
 COOKE, C. W. (1883). 129, Walm Lane, Cricklewood. M.D. Lond. Merchant Taylors' Scholar.
 w. 1883-4. 1st Year Student, 1st Entrance Science Scholarship.
 H.P., A.H.S., Clin. Asst. Throat and Ear Depts.
 COOKE, E. H. (1894). M.B., B.S. Durh.
 COOKE, J. (1853). Tettenhall, Wolverhampton. M.B. Lond.; F.R.C.S. 1855. Comparative Anatomy, Prize.
 COOKE, J. B. (1874). H.M. Prison, Borstal, Kent.
 COOKSON, H. (1881). 8, Rawlinson Road, Oxford. Maj., I.M.S. Bengal. (Retired). F.R.C.S., D.P.H.
 COOMBE, A. T. (1871). 81, Clarendon Road, Notting Hill.
 COOMBE, C. F. (1882). 459, Crookes Moor Road, Sheffield.
 COOPER, A. E. (1898). 41, Sloane Sq. B.A., M.D., B.Ch. Dub.
 COOPER, G. F. (1878). Lagunas, Iquique, Chili, South America. M.B., B.S. Lond. H.S., A.H.S., A.H.P., R.A.
 COOPER, H. J. (1886). Belmont, Lyme Regis, Dorset. M.A., M.B., B.C. Cantab.
 H.P., Clin. Asst. Ear and Skin Depts.
 COOPER, H. S. (1886). Brightlingsea, Essex.
 s 1887. 2nd Year Student, 2nd Coll. Prize.
 COPELAND, W. H. L. (1885). 4, Bolton Gardens, South Kensington. M.A., M.D., B.C. Cantab.
 H.P.
 COPEMAN, A. H. (1890). The Parade, Cowes, I.W. B.A. Cantab.
 COPEMAN, S. M. (1883). Local Govt. Board, Whitehall, and 16, Langham Mansions, Earl's Court Square. M.A., M.D. Cantab.; F.R.C.P., D.P.H. Lecturer on Pub. Health, Westminster Hosp.; Exam. in Public Health, R.C.S.
 Asst Lect. on Physiology and Demonstrator of Morbid Histology.
 COPP, C. J. (1897). 96, Wellesley St., Toronto. M.D., C.M. Trin. Coll., Toronto.
 CORBETT, T. (1857). Severn House, Droitwich, Worc.
 CORBIN, E. K. (1870). 8, Saumarez Street, St. Peter Port, Guernsey.

- CORBIN, M. A. B. (1832). 9, Saumarez Street, St. Peter Port, Guernsey. F.R.C.S.
1834. Cheselden Medal.
- CORNER, E. M. (1895). M.A., M.B., B.C. Cantab., B.Sc. Lond., F.R.C.S. H.S., A.H.S., Surgical Registrar.
- CORNEY, B. G. (1868). Suva, Fiji.
- CORNWALL, J. W. (1892). Capt. I.M.S. M.A., M.B., B.C. Cantab. Clin. Asst. Throat Dept.
- CORY, I. R. (1878). Shere, Guildford, Surrey.
- COULTER, W. (1881). 212, Harington Street, Calcutta, India. M.D., M.Ch.R.U.I.
- COUSINS, J. W. (1853). Riversdale, Kent Rd., Southsea. M.D. Lond.; F.R.C.S., J.P.
1855. Surgery, Prize;
Midwifery, Prize.
1856. Clinical Medicine, Prize;
Surgery and Surgical Anatomy. Cheselden Medal.
- COWBURN, A. D. (1889). 31, Barkston Gardens, Earl's Court. M.D. Brux., D.P.H.
Clin. Assist. Throat Dept.
- COWELL, A. R. (1887). Bath Cottage, South End Rd., Hampstead, M.A., M.B., B.C. Cantab.
- COWEN, E. I. (1875). Cleveland Villa, Thornaby-on-Tees.
- COWEN, E. J. (1892). Chanaguri, Nalgrakata, Post Office, Jalpaiguri, Bengal, India. B.A. Dub., M.B., B.S. Durh., B.Ch.
- COWEN, P. (1861). 47, Ingleby Road, Holloway. M.D. Durh.; D.P.H. Camb.
1862. 1st Year Student, 2nd Coll. Prize.
1863. 2nd Year Student, 2nd Coll. Prize.
1864. 3rd Year Student, 2nd Coll. Prize.
- COWEN, T. P. (1884). County Asyl., Prestwich, Manchester. M.D., B.S. Lond.
W 1884-5. 1st Year Student, Half 1st and 2nd Coll. Prizes.
S 1885. 1st Year Student, 2nd Coll. Prize.
W 1885-6. 2nd Year Student, 1st Coll. Prize.
S 1886. 2nd Year Student, 1st Coll. Prize.
W 1886-7. 3rd Year Student, 2nd Coll. Prize. H.P., H.S., A.H.S., Clin. Asst. Ear Dept.
- COWEN, W. A. D. (1873). Maj. R.A.M.C.
- COWIE, A. M. (1890). Bank Buildings, Hong Kong, China. M.B., C.M. Aberd.
- COWIE, R. A. (1890). Cilfynydd, near Pontypridd, Glamorgansh. M.A., Camb.
- Cox, A. E. (1887). 36, Hoghton Street, Southport. M.B., C.M. Edin.
- COX, A. E. (1881). 58, High St., and Upton Rd., Watford, Herts.
- COX, J. L. C. (1879). St. Ann's Bay, Jamaica.
- COXWELL, C. F. (1879). Jesmond, Blackheath Park. M.D. Cantab., M.R.C.P., D.P.H.
1880. 4th Year Student, the Mead Medal. H.P.
- CRANSTOUN, C. B. (1881). 15, Broad Street, Ludlow, Salop. M.B. Durh.
- CRANSTOUN, G. (1881). 3, Brand Lane, Ludlow, Salop. M.B. Durh.
- CRAWFORD, G. B. (1885). 15, Mark Street, Portrush, Co. Antrim. M.D., M.Ch. R.U.I.
- CREIGHTON, C. 34, Gt. Ormond Street. M.A., M.D., C.M. Aberd.; M.A. Cantab.
Surg. Registr., 1873.
- CREIGHTON, E. (1878). Tankerville House, Greyhound Lane, Streatham Common.
- CRICK, A. (1885).
- CRICK, S. A. (1874). Barrow-on-Trent, near Derby. M.B., M.S. Durh.
W 1875-6. Prosector's Prize.
W 1876-7. 3rd Yr Student, 3rd Coll. Prize. A.H.P., A.H.S.
- CRICK, W. T. (1877). Houghton House, Stoney Gate, Leicester.
- CRISP, E. H. (1883). The Lawns, Balham Hill. B.A. Cantab.
Clin. Asst. Skin, Throat, and Ear Depts.
- CRISP, T. (1874). M.B. Lond.
- CROFT, J. (1850). 6, Mansfield Street, Cavendish Sq. F.R.C.S., Consulting Surgeon St. Thomas's Hospital.
Special Lecturer on Clinical Surgery, Surgeon, Lecturer on Practical Surgery, and Assistant Demonstrator of Anatomy.
- CROKER, E. U. (1891). House Phys., Victoria Hosp., Chelsea.
- CROSBY, H. T. (1880). 19, Gordon Sq. M.A., M.B., B.C. Cantab.
- CROSBY, Alderman T. B. (1850). 19, Gordon Sq. M.D. St. And.; F.R.C.S., J.P.
1851. Physiology, Prize;
Descriptive Anatomy, Prize;
Medicine, Prize;
Surgery, Prize.
1852. Physiology, Prize;
Forensic Medicine, Prize;
Practical Chemistry, Prize;
Surgery and Surgical Anatomy,
Bronze Cheselden Medal;
Comparative Anatomy, Prize.
H.S. and Demonstr. of Anat.
- CROSS, E. J. (1883). St. Neots, Hunts. D.P.H. Cantab.
- CROSS, G. (1887). Ivy House, Marlowes, Hemel Hempstead.

- CROSS, J. (1888).
 CROSSMAN, J. (1870). 331, Wands-
 worth Road. M.D. Durh.
 1871. Physical Society's 1st Year's Prize.
 1872. Physical Society's 2nd Year's Prize.
 1873. Physical Society's 3rd Year's Prize.
 H.S.
- CROUCH, H. C. (1890). 55A, Welbeck
 Street. Anaesthetist, St. Thomas's
 Hospital.
 w 1890-1. 1st Year Student, 2nd Entrance
 Science Scholarship.
 H.S., A.H.S.
- CRoudACE, J. H. (1883). Foregate
 House, Foregate, Stafford.
- CROWDY, F. D. (1881). Belvedere
 House, Torquay. M.A., M.D. Oxon.
 w 1884-5. 4th Year Student, the Mead
 Medal.
 H.S., A.H.S., H.P.
- CROXFORD, W. C. (1883). Caledonia
 House, Westgate, Peterborough.
- CUFF, A. W. (1891). 263, Glossop Rd.,
 Sheffield. B.A., M.B., B.C. Cantab.,
 F.R.C.S.
 H.S., A.H.S., Clin. Asst. Throat Dept.
- CULLINGWORTH, C. J. 14, Man-
 chester Square. M.D., Hon. D.C.L.
 Durh.; F.R.C.P.; Obst. Phys. and
 Lect. on Dis. of Women, St. Thomas's
 Hospital. Examiner in Midwifery,
 &c., Univ. Camb.
 Lect. on Midwifery.
- CUNNINGHAM, J. F. (1894).
 A.H.S.
- DADACHANJI, E. R. (1880). Baroda,
 India.
- DALGADO, D. G. (1879). Savantvadi,
 India. M.D. Brux.
- DANIEL, A. W. (1895). The Silver
 Birches, Epsom. B.A., M.B., B.C.
 Cantab.
- DANIEL, E. G. C. (1892). 28, Station
 Road, Epsom. M.A., M.B., B.C.
 Cantab
 H.P.
- DANIEL, R. N. (1886). 13, Nevern
 Square, South Kensington.
- DANVERS, H. (1882). Villa Mostaccini
 Bordighera, Italy (Winter). Baths
 of Lucca (Summer).
- DARBYSHIRE, D. E. (1892). Stone-
 leigh, Bedwardine Road, Upper
 Norwood. M.B., B.Ch. Vict.
- DARKER, G. F. (1887). 21, Palace
 Square, Upper Norwood.
- DARTER, G. B. S. (1885). Victoria West,
 Cape Colony. M.B., B.S. Durh.
- DAVIDSON, A. D. (1872). 9, Picton
 Place, St. Helen's Road, Swansea.
 M.A., M.D. Cantab.
 Ophth. Asst.
- DAVIDSON, G. (1888). Gayndah
 Hospital, Queensland.
- DAVIES, A. O. (1886). Penrallt,
 Machynlleth, Montg. J.P.
- DAVIES, D. S. (1874). Public Health
 Offices, 40, Prince Street, Bristol,
 and 60, Oakfield Road, Clifton.
 (Not in private practice.) M.B.,
 M.D. (State Med.) Lond.; D.P.H.
 Cantab.
 1875-6. Physical Society's 1st Year's Prize.
 H.S., A.H.S., A.H.P.
- DAVIES, S. H. R. (1888). 24, Monk
 St., Abergavenny, N. Wales.
- DAVIES, W. J. E. (1891). St. Luke's
 Infirmary, Cale Street, Chelsea.
 Clin. Asst. Skin Dept.
- DAVIS, E. H. (1870). West Hartle-
 pool. J.P.
 R.A.
- DAVIS, G. W. (1880). Sunnymede, Main
 Road, Sidcup, Kent. M.D., B.S.
 Durh.
- DAVIS, H. E. (1882). York Villa,
 Ross-on-Wye, Herefordsh.
- DAVIS, H. J. (1889). 9, Norfolk
 Crescent, Hyde Park, and New
 University Club, M.A., M.B., B.C.
 Cantab., M.R.C.P.
 H.S., A.H.S. Clin. Assist. Ear Dept.
- DAVIS, R. (1889). Darrickwood,
 Orpington, Kent.
- DAWNAY, A. H. P. (1892). 24, Upper
 Phillimore Place, Kensington.
 Ophth. H.S. Clin. Assist. Skin Dept.
- DAWSON, W. J. H. (1888). 71, High
 Street, Deptford.
- DAY, E. J. (1871). Dorchester.
- DAY, W. H. (1843.). Surrey Street,
 Norwich.
- DEANE, E. (1873). Carlow Lodge,
 Clevedon, Somerset (retired).
- DE CAUX, H. L. (1881) 875, Old
 Kent Road.
- DECK, J. F. (1859). Ashfield, Sydney,
 N.S. Wales. M.D. St. And.
 1860. 1st Year Student, 1st Coll. Prize.
 1861. 2nd Year Student, 1st Coll. Prize
 Physical Society's Prize.
 1862. 3rd Year Student, 1st Coll. Prize
 Physical Society's Prize;
 Cheselden Medal;
 Treasurer's Gold Medal.
- DE GRUCHY, C. W. (1881). 30, High
 Street, Caerleon, Monmouthsh.
- DE JERSEY, W. B. (1886). Netherton,
 Waterden Road, Guildford. B.A.,
 M.B., B.C. Cantab.
 A.H.P., Clin. Asst. Ear Dept.
- DE LOM, H. A. (1880). Capt. R.A.M.C.
 (retired).

- DENNE, T. V. de. (1864). Cradley Heath, Staffordsh.
- DE VILLIERS, J. H. (1890). Rondebosch, Cape Town.
- DEWES, F. J. (1880). Capt. I.M.S., Madras.
- DE WET, P. C. (1882). Pretoria, Transvaal, S. Africa.
- DEWHURST, J. H. (1887). Chipping Campden, Glouc. M.A., M.D., B.C. Cantab.
H.S., A.H.S.
- DE WOLFSON, L. E. G. (1877). 26, St. John's Hill, Shrewsbury.
- DICKENS, C. H. (1888). York House, 51, Albert Bridge Rd., Battersea Pk. M.B., B.S. Durh.
- DICKERSON, S. H. (1851). Brig.-Surg., A.M. Dept. (retired).
- DICKINSON, W. G. (1871). Elm Bank, West Hill, Putney Heath. M.D. Durh., D.P.H.
- DICKSON, T. H. (1885). Custom House, Lr. Thames Street, and 27, Scarsdale Villas, Kensington. M.A., M.B., B.C. Cantab.
A.H.P., Clin. Asst. Throat Dept.
- DILLON, R. W. (1888). 39, Allfarthing Lane, Wandsworth.
- DIXON, H. L. (1888). Asst. Med. Off. St. Andrew's Hosp., Northampton. M.A., M.B., B.C., D.P.H. Cantab.
- DIXON, W. E. (1890). Elsdene, Benson Rd., Forest Hill. M.D. (State Med.), B.S., B.Sc. Lond. D.P.H. Camb.
w 1890-91. 1st Year Student, 1st Entrance Science Scholarship.
s 1891. 1st Year Student, 2nd Coll. Prize. H.P., Clin. Asst. Electr. Dept.
Salters' Company Research Fellow.
- DOBSON, A. (1889). 115, Bath Street, Ilkeston, Derbysh.
- DOBSON, N. C. (1864). Avonmore, Sneyd Park, Bristol. F.R.C.S., Emer. Prof. Surg. Bristol Univ. Coll., Cons. Surg. Bristol Gen. Hosp.
1865. 1st Year Student, 1st Coll. Prize.
1866. 2nd Year Student, 1st Coll. Prize.
1867. 3rd Year Student, 2nd Coll. Prize;
A Prize and Hon. Cert. for Proficiency in Surgery and Surgical Anatomy at the Cheselden Medal Examination;
Treasurer's Gold Medal.
H.S.
- DOMINY, G. H. (1892). Ecclesbourne, Winn Road, Southampton.
- DONKIN, H. B. (1868). 108, Harley Street, Cavendish Sq. M.A., M.D. Oxon.; F.R.C.P.
H.P.
- DORMAN, M.R.P. (1888). 9, Norfolk Crescent, Hyde Park. M.A., M.D., B.C., D.P.H. Cantab.
H.P., Clin. Asst. Throat Dept.
- DOUDNEY, G. H. (1876). St. Lawrence, Wainfleet, Linc. M.B. Durh.
- DOUGLAS, A. L. (1878). 163, Westbourne Terr., Hyde Park.
- DOWDING, E. F. C. (1892). Clevedon House, New Road, Chatham.
- DRAKE, C. H. (1857). Blandford Road, Reigate, Surrey.
1858. 2nd Year Student, Treasurer's 1st Prize;
Clinical Medicine, 2nd Prize.
1859. Surgery and Surgical Anatomy, Cheselden Medal;
General Proficiency, Treasurer's Medal.
H.S.
- DRAKE, T. (1857). Red House, Winchester.
1858. 2nd Year Student, Treasurer's 1st Prize.
1859. 2nd Year Student, President's Prize.
1860. 3rd Year, 1st Coll. Prize;
Surgery and Surgical Anatomy, Cheselden Medal;
General Proficiency, Treasurer's Medal.
- DRAKE, W. E. (1888). Red House, Winchester. M.A., M.B., B.C. Cantab.
- DRESSER, A. K. (1872). Calstock, Cornwall.
- DRINKWATER, T. W. (1871). Chemical Laboratory, 5, Teviot Place, Edinburgh. Lect. on Chem. Sch. of Med. Edin.; Exam. in Chem. and Pub. Health R.C.S. Edin.
- DRUITT, A. B. (1880).
- DUDGEON, L. S. (1894).
H.P., A.H.P.
- DUFF, J. (1885). 5, Abbey St., Abbey Sq., Chester. M.D., C.M. Glasg.; M.R.C.P.
Clin. Asst. Throat Dept.
- DUKES, C. (1864). Sunnyside, Rugby, Warwickshire. M.D., B.S. Lond., F.R.C.P., J.P.; Physician to Rugby School, and Senior Physician to Rugby Hospital.
H.S.
- DUKES, T. A. (1885). 16, Wellesley Road, Croydon, Surrey. M.B., B.Sc. Lond.
H.P.
- DUMERGUE, H.W. (1884). 16, Clarges Street, Mayfair. M.A., M.D., B.C. Cantab.

- DUNCAN, H. (1882). 11, Bolton Street, Piccadilly. B.A. Cantab., M.B. Lond.
w 1882-3. 1st Year Student, 1st Entrance Science Scholarship. 1st Coll. Prize.
w 1883-4. 2nd Year Student, Prosector's Prize.
A.H.S. Clin. Asst. Skin Dept.
- DUNCAN, W. (1876). 6, Harley St., Cavendish Sq. M.R.C.P. Lond., M.D. Brux., F.R.C.S.; Obstetric Physician to, and Lecturer on Obstetric Medicine and late Lecturer on Practical Midwifery at Middlesex Hospital. Sen. Phys. Chelsea Hospital for Women. Examiner in Midwifery, Examining Board in England.
w 1876-7. 1st Year Student, The William Tite Scholarship.
s 1877. 1st Coll. Prize.
w 1877-8 2nd Year Student, The Musgrave Scholarship; 2nd Year Physical Society's Prize.
s 1878. 1st Coll. Prize.
w 1878-9. 2nd Tenure Musgrave Scholarship; 1st Coll. Prize; 3rd Year Physical Society's Prize; Grainger Testimonial Prize.
w 1879-80. 4th Year Student, The Cheselden Medal; The Treasurer's Medal.
w 1881-2. The Solly Medal and Prize. H.S., R.A.
- DUNN, E. D. (1883).
- DUNN, J. E. (1878). 24, Stephenson Terrace, Preston, Lanc.
- DUNSTAN, W. R., Queen Anne's Mansions. M.A., Oxon, F.R.S. Lecturer on Chemistry.
- DURANT, R. J. A. (1876). Maj. R.A.M.C.
- DURRANT, C. E. (1891). Avondale, Kingston Hill.
Clin. Asst. Ear Dept.
- DURRANT, T. A. (1883). 42, High Street, Market Harborough, Leic.
Clin. Asst. Skin and Ear Depts.
- DURSTON, J. C. (1888). 67D, Upper Tulse Hill. Surg. R.N.
- DUTTON, A. S. (1884).
- DYBALL, B. (1890). 4, Bystock Terrace, Exeter. M.B., B.S. Lond.; F.R.C.S.
w 1891-2. 1st Year Student, 1st College Prize.
w 1894-5. 4th Year Student, The Cheselden Medal.
1896. Beaney Scholarship.
H.S., A.H.S., Clin. Asst. Ear Dept.
- DYKE, T. J. (1836). Council Offices, Merthyr-Tydfil. F.R.C.S.
- EARLE, H. E. L. (1878). Surg. R.N. (retired).
- EASTON, T. (1883). M.A., M.D., C.M. Edin.
- ECCLES, C. H. (1883). The Elms, Nafferton, Yorks.
w 1884-5. 2nd Year Student, 1st Coll. Prize.
s 1885. 2nd Year Student, 1st Coll. Prize.
w 1885-6. 3rd Year Student, 1st Coll. Prize.
s 1886. 3rd Year Student, 1st Coll. Prize. H.P.
- ECCLES, R. B. (1885). Bridge House, Great Driffield, Yorks.
- EDDOWES, J. H. (1842). Burleigh Fields, Loughborough, Leic. M.D. Glasg.
1843. Comparative Anatomy, Prize.
1844. Clinical Medical Reports, Silver Medal.
1845. Clinical Medicine, Prize.
- EDDOWES, W. D. (1844). Stamford, Linc. Cons. Surg. Stamford Infirm.
1845. Descriptive and Surgical Anatomy, Prize.
- EDDOWES, W. D., Jun. (1877). 20, St. George's Square, Stamford, Lincs.
- EDGE, F. 54, Darlington Street, Wolverhampton. M.D., B.S., B.Sc. Lond.; F.R.C.S., M.R.C.P.
- EDMONDS, C. G. (1862). Manor House, 22, Gleneagle Rd, Streatham.
- EDMUND, W. (1871). 2, Devonshire Place, Portland Place. M.A., M.B., M.C. Cantab.; F.R.C.S. Surg. to Out-Patients, Evelina Hosp. H.P., R.A., H.S.
- EDWARDS, F. W. (1887). 222, Stanstead Road, Forest Hill.
- EDWARDS, H. H. J. (1893). 13, Narbonne Avenue, Clapham Common.
- EDWARDS, V. (1842). The Villa, Shotisham, Woodbridge, Suffolk (retired).
- EDYE, J. S. (1880). Maj. R.A.M.C.
- ELLIOTT, A. E. (1892). M.A. Cantab.
- ELLIOTT, J. W. (1854). 5, Manor Road, Forest Hill (retired). Late Surg. Dentist.
- ELLIS, C. I. (1896). 33, Stormont Road, Clapham Common. M.B. C.M. Aberd.
- ELLIS, F. H. (1895). Broxmore, Woking. B.A., M.B., B.C. Cantab. H.P., A.H.P.
- ELLIS, H. H. (1880). Carbis Water, Lelant, Cornwall.
- ELLIS, J. (1854). Cobourg St., Fratton, Portsmouth, and Anaheim, Los Angeles Co., California. M.D. Brux.; M.R.C.P.I. H.S.
- ELLIS, R. K. (1884). Lowdham, Notts. M.A., M.B., B.Ch. Oxon. Jun. and Sen. Obst. H.P.

- ELLIS, W. C. (1884). Tollerton, Easingwold, Yorks.
- ELWIN, C. J. (1853). 6, City Road. 1855. Practical Midwifery, Prize.
- EMBLETON, D. (1833). 19, Claremont Place, Newcastle-on-Tyne (retired). M.D. Durh., M.D. Pisa, F.R.C.P. Cons. Phys. Newc. Ry. Infirm.
- EMIN, M. (1891). 44, Thorne Road, South Lambeth. M.B., C.M. Edin.
- EMSON, A. (1869). Dorchester.
- ENGLAND, G. F. A. (1883). 12, Southgate Street, Winchester. B.A., M.D., B.C. Cantab.
- ENGLAND, H. (1888). The Hospital, Gravesend. B.A. Cantab.
- ETHERIDGE, C. (1860). Seasalter, Whitstable, Kent.
- EVE, F. C. (1897). B.A., M.B., B.C. Cantab.
w 1867-8. 3rd Year Student, University Scholarship.
w 1898-9. Grainger Testimonial Prize.
w 1899-1900. 5th Year Student, Medicine Prize.
A.H.P.
- EVE, R. W. (1851). 101, Lewisham High Road. M.B. Aberd.
- EVELYN, W. A. (1882). 24, Micklegate, York. M.A., M.D. Cantab.
- FAIRBAIRN, J. S. (1893). 60, Wimpole Street and St. Thomas's Hospital. M.A., M.B., B. Ch. Oxon. F.R.C.S. Obst. Tutor and Registrar.
H.P. Obst. H.P.
- FAIRBANK, J. (1864). 18, George St., Hanover Square.
1866. 2nd Year Student, Prosector's Prize.
- FANNING, W. J. (1892). The Sanatorium, Mundesley, Norfolk. B.A. Oxon.
- FARAKER, W. C. (1860). Glenview, Peel, Isle of Man.
- FARRANT, S. (1857). North Street House, Taunton.
- FAULDS, H. (1886). 141, Duke St., Fenton, Stoke-on-Trent.
- FAWSSETT, B. (1893).
- FAWSSETT, F. (1882). 83, High Street, Lewes, Sussex. M.B., B.S. Lond.
w 1883-4. 1st Year Student, 2nd Entrance Science Scholarship. The William Tite Scholarship.
s 1884. 1st Year Student, 1st Coll. Prize.
w 1884-5. 2nd Year Student, The Musgrave Scholarship.
w 1885-6. 3rd Year Student, 2nd tenure of Musgrave Scholarship, with 3rd Coll. Prize.
w 1886-7. 4th Year Student, The Cheselden Medal, Treasurer's Gold Medal.
R.A., H.S., A.H.S.
- FELL, W. (1877). Wellington, New Zealand. M.D. Oxon.
H.P., A.H.P., A.H.S., R.A.
- FENTON, H. A. H. (1875). 1, Cumberland St., Pimlico. M.D. Brux.
w 1875-6. 1st Entrance Science Scholarship.
s 1876. 1st Year Student, 1st Coll. Prize.
- FENTON, T. G. (1894). Castletown House, Easky, Co. Sligo.
- FENWICK, P. C. (1889). Christchurch, New Zealand. M.B. Lond. Surg. Christchurch Hosp.
Sen. and Jun. Obst. H.P.
- FERNANDES, A. S. Kadur District, Chickmagalore, India. M.R.C.P. Edin.
- FERNIE, W. T. (1850). Kimbolton, The Leas, Folkestone. M.D. Durham. R.A.
- FIELDER, S. (1886). Gosford, New South Wales.
- FIELDING, J. (1868). Bethel Street, Norwich. M.D. Vict. Univ. Canada. R.A.
- FINCHAM, W. S. (1884). 53, Kew Bridge Road, Brentford, Middlx.
- FINUCANE, M. I. (1881). Colonial Hosp., Suva, Fiji.
- FISH, C. E. (1889). B.A., M.B., B.C. Cantab.
- FISHER, J. (1888). D.S.O., Capt. I.M.S. Bengal. B.A., M.B., B.C. Cantab.
Ophth. H.S.
- FISHER, J. H. (1886). 34, Queen Anne Street, Cavendish Square. M.B., B.S. Lond., F.R.C.S. Asst. Ophthalmic Surgeon. Demonstr. of Anat. St. Thos. Hosp. Asst. Surg. Roy. Ophth. Hosp.
w 1887-8. 1st Year Student, The William Tite Scholarship.
s 1888. 1st Year Student, 1st Coll. Prize.
w 1888-9. 2nd Year Student, The Musgrave Scholarship.
w 1889-90. 3rd Year Student, 2nd tenure of Musgrave Scholarship, with 1st Coll. Prize.
s 1890. 3rd Year Student, 1st Coll. Prize.
w 1890-1. 4th Year Student, Treasurer's Gold Medal.
Sen. and Jun. Obst. H.P., H.S., A.H.S., Clin. Asst. Ear Dept., Ophth. H.S.
- FISHER, T. (1872). Mulberry House, Gt. Eccleston, Garstang, Lanc. J.P.
s 1873. 2nd Year Student, 2nd Coll. Prize.
w 1874. 2nd Year Student, 3rd Coll. Prize.
w 1875. 3rd Year Student, Surgery and Surgical Anatomy Prize.
- FISHER, T. E. H. (1885). 272, Wightman Road, Hornsey.
- FITZGERALD, G. C. (1882). Med. Superint. Kent Co. Asyl, Charltham Down, Canterbury. B.A., M.D., B.C. Cantab.
- FITZGERALD, W. A. (1879). Monte Carlo, Monaco. A.B., M.D. Dublin.; F.R.C.S.I.

- FITZ-HENRY, G. W. (1880). Amberley, North Canterbury, New Zealand.
- FLEGG, F. A. M. (1886). George Lane, South Woodford, Essex.
- FLETCHER, G. (1869). 60, Southwood Lane, Highgate. B.A., M.D.Cantab.
- FLETCHER, W.B. (1859). Fleet Surg. R.N. (retired).
- FLOYER, F. A. (1880). Mortimer, Berks. B.A., M.B. Cantab. Demonstr. of Pract. Surg.
- FOLEY, C. N. (1878). Darwin Harbour, Falkland Islands East.
- FONMARTIN, H. de (1875). Vue, Loire Inférieure, France. M.D. Paris.
- FOOKS, W. P. (1888). Med. Superint. Brentford Union Infirmary, Isleworth. M.A., M.B., B.C. Cantab. H.P.
- FOOTNER, E. (1855). Brig.-Surg. A.M. Dept. (retired). M.D., C.M. Aberd.
- FORD, A. V. (1872). South View Lodge, Kent Rd., Southsea.
- FORD, T. A. V. (1880). Haileybury College.
- FORDE, T. A. M. (1885). 21, Clarence Parade, Southsea. H.S., A.H.S., Clin. Asst. Skin and Throat Depts.
- FORRESTER, W. (1894). Gurgaon, Delhi, Punjab, India.
- FORT, T. (1873). Falcon House, King Street, Oldham.
- FORWARD, E. L. (1892). The Coppice, Nottingham.
- FORWARD, F. E. (1884). F.R.C.S. H.P., Ophth. H.S.
- FOURACRE, R. P. (1859). 58, Tollerington Park, Holloway.
- FOWLER, F. (1883). Minchinhampton, Stroud, Gloucester.
- FOWLER, REV. CANON J. T. (1853). Bp Hatfield's Hall, Durham, and Winterton, Doncaster (retired). M.A., D.C.L. Durh. H.S.
- FOXWELL, A. (1877). 22, Newhall Street, Birmingham, and Northfield Grange, near Birmingham. B.A. Lond.; M.A., M.D. Cantab.; F.R.C.P. Physician Queen's Hosp., Birmingham. Examiner in Medicine Univ. Camb. H.P.
- FRANCIS, G. P. (1874). The Bulwark, Brecon.
- FRANKLIN, G. C. (1866). 39, London Road, Leicester. F.R.C.S. Hon. Surg. Leic. Infy. H.S., R.A.
- FRASER, D. (1877). Peterborough, Ontario, Canada.
- FRASER, D. H. (1889). 72, Bolton Road, Pendleton, Manchester.
- FRASER, H. (1884). The Thorns, Slough.
- FRAZER, W. D. (1890). 45, Fountain Road, Fordsburg, Johannesburg. H.S., A.H.S., Clin. Asst. Ear and Electr. Depts.
- FREEMAN, A. J. (1861). 14, Manchester Square, and San Remo, Italy. M.D. Aberd. Asst. Res. Med. Off.
- FREEMAN, D. (1857). 29, Dorset Square. 1859. Clinical Medicine, Prize.
- FREEMAN, E.C. (1879). Maj. R.A.M.C.
- FREEMAN, W. H. (1840). 10, Cromwell Road, Hove, Sussex (retired).
- FROHWEIN, O. F. (1880). 48, Lichfield Street, Burton-on-Trent.
- FRY, W. B. (1895). w 1895-6. 1st Year Student, 2nd Entrance Scholarship, College Prize. w 1899-1900. 5th Year Student, Public Health Prize.
- FULLER, A. L. (1888). 7, Oxford Row, Bath.
- FULLERTON, F. W. (1887). 2a, Pryme Street, Hull. M.D., B.S. Durh.
- GABBETT, P. C. (1887). Capt. I.M.S., Madras.
- GAFF, J. (1894). 160, Kennington Road. M.B., Lond. w 1894-5. 1st Year Student, 1st Entrance Science Scholarship, the Wm. Tite Scholarship. s 1895. 1st Year Student, 1st Coll. Prize. w 1895-6. 2nd Year Student, The Peacock Scholarship. w 1896-7. 3rd Year Student, 2nd tenure of Peacock Scholarship, with 2nd Coll. Prize. s 1897. 3rd Year Student, 1st Coll. Prize. w 1898-9. 5th Year Student, The Treasurer's Gold Medal. A.H.P., Clin. Assist. Skin Dept.
- GALT, W. J. (1895). Cottingham, Yorks. B.A., M.B., B.Ch. Oxon. Clin. Assist. Ear Depart.
- GARDENER, W. F. (1884). Darley House, Venner Road, Sydenham.
- GARNER, J. (1888). Clonmel, co. Tipperary.
- GARROD, J. R. (1896). Alconbury Hill, Huntingdon. B.A., M.B., B.C. Cantab.
- GARTON, W. (1869). Inglewood, Aughton, Ormskirk. M.D., C.M. Edin.; F.R.C.S. 1870. 2nd Year Student, 2nd Coll. Prize; Physical Society's 2nd Year's Prize. 1871. Physical Society's 3rd Year's Prize. H.P., H.S., R.A.
- GATES, E. A. (1893). 11, Collingham Road, South Kensington. H.P., H.S., A.H.S.

- GAUSSEN, D. P. (1884). The Hill, Dunmurry, co. Antrim. M.D., R.U.I.
- GEDGE, A. S. (1886). Pewsey, Wilts.
- GENGE, G. G. (1890). 1, Poplar Walk, Croydon. M.D., B.S. Lond., D.P.H. Camb.
w 1890-1. 1st Year Student, 1st Coll. Prize.
s 1891. 1st Year Student, 1st Coll. Prize.
w 1891-2. 2nd Year Student, The Peacock Scholarship.
w 1892-3. 3rd Year Student, and Tenure of Peacock Scholarship, with 1st Coll. Prize.
- w 1893-4. 4th Year Student. The Mead Medal; The Treasurer's Gold Medal.
- H.P., Obst. H.P., Clin. Assist. Ear and Skin Departs.
- GEORGE, A. W. (1888). 1, Burton Road, Brondesbury. M.D., C.M. Edin.
- GEORGE, C. F. (1854). Bellevue House, Kirton-in-Lindsey, Linc.
1856. 2nd Year Student, Dr. Root's Prize.
1857. Surgery and Surgical Anatomy, Cheselden Medal.
H.S.
- GEORGE, H. (1882). Innisfail, Alberta, Canada. M.D. St. And.
- GERVIS, A. F. (1884). 1, Steele's Road, Hampstead.
- GERVIS, F. H. (1891). 2, Lyncroft Mansions, West Hampstead. M.D. Brux.
w 1891-2. 1st Year Student, 2nd Entrance Science Scholarship.
H.S., A.H.S.
- GERVIS, F. H. (1860). 1, Fellows Road, Haverstock Hill.
1861. 1st Matriculation Scholarship—Coll. Prize, 2nd College Prize.
1862. 2nd Year Student, 1st Coll. Prize.
H.S. R.A.
- GERVIS, H. (1855). Hillingdon Heath, Uxbridge. M.D. Lond., F.R.C.P. Consulting Obstetric Physician to St. Thomas's Hospital, Cons. Phys. to the Royal Maternity Charity, and to Grosvenor Hosp. for Wom.
1856. 1st Year Student, Treas. 1st Prize; Matriculation Examination, Physics, &c., Prize.
1857. 2nd Year Student, President's Prize Physical Society's Essay, Prize.
1858. Clinical Assistant (Medicine), 2nd Prize; Physical Society's Essay, Prize; General Proficiency. Treas. Medal. Obstetric Physician. Lecturer on Midwifery and Diseases of Women and Children.
- GERVIS, H. (1884). 74, Dyke Road, Brighton. M.A., M.B., B.C. Cantab.
H.S., A.H.S., R.A.
- GIBBON, A. H. (1893). 12, Abbey Hill, Bury St. Edmunds
Clin. Asst. Elect. Dept.
- GIBBS, A. N. G. (1879). 52, Whiteladies Road, Clifton, Bristol.
- GIBSON, W. A. (1888). Stockfield, Leigham Vale, Streatham.
- GILBERT, H. P. (1873).
- GILBERT, L. (1892). Lieut I.M.S., M.B., B.S. Lond., D.P.H., Camb. w 1892-3. 1st Year Student, Half 2nd Coll. Prize.
H.S., A.H.S., Jun. Obst. H.P.
- GILBERTSON, W. (1889). 63, Evelyn Gardens. M.A. Cantab.
- GILDER, S. E. A. (1875). 16, Salisbury Gardens, Tunbridge Wells.
- GILES, F. W. (1873). Villa Germaine, Cannes, France. M.B. Durh.
- GILL, J. (1872). 30, West Mall, Clifton, Bristol. M.D. Brux.
- GILLAM, J. B. (1888). Holt, Norfolk. B.A., M.B., B.C. Cantab.
- GILLARD, C. R. (1872). M.D., C.M. Montreal.
- GILMOUR, J. H. (1870). Hurst Lodge, Hurstbourne - Tarrant, Andover, Hants.
- GIMLETTE, G. H. D. (1873). Lt-Col. I.M.S. Bengal. M.D., M.Ch. R.U.I. w 1876-7. Physical Society's 3rd Year's Prize.
H.P., R.A., H.S., A.H.S.
- GIMLETTE, J. D. (1885). Kuala Lipis, Ulu Pahang, Malay Peninsula.
- GIMLETTE, T. D. (1874). Fleet Surg. R.N.
- GIRDLESTONE, H. E. (1886). Ardouulan, Poole Road, Bournemouth.
- GLADSTONE, A. E. (1893). Newton Ferrers, Plymouth. B.A., Camb.
- GODDARD, B. (1885). 27, Pentonville Road, and 106, Highbury New Park.
- GODDARD, E. (1859). North Lynn, 106, Highbury New Park. M.D. Durh. 1860. Matriculation Examination, Classics, &c., Prize.
- GODFREY, A. E. (1881). Lansdowne, Woodside Park, North Finchley. M.B. Lond.
s 1883. 2nd Year Student, 2nd Coll. Prize.
w 1883-4. 3rd Year Student, 2nd Coll. Prize.
H.P., A.H.P., R.A. Clin. Asst. Ear Dept.
- GODFREY, H. J. C. (1878). Eaglehurst, Bridlington Quay, Yorks.
- GODFREY, T. H. (1882). The Red House, Church End, Finchley. M.B. Durh.; D.P.H. Cantab.
- GOLDSMITH, J. (1854). M.D. St. And. (retired).
- GOOD, J. W. (1877). Winnipeg, Canada.
- GOODBODY, C. M. (1893). Lieut. I.M.S.
- GOODDY, E. S. (1881). Seiriol Villa, North Madoc St., Llandudno. F.R.C.S.
- w 1882-3. 2nd Year Student, 3rd Coll. Prize.
s 1883. 2nd Year Student, 1st Coll. Prize.
H.S., A.H.S., A.H.P.

- GOODE, H. N. (1891). 3, Vicarage Gardens, Kensington. M.B. Lond. H.P. Clin. Assist. Elect Dept.
- GOODHUE, F. W. J. (1888). B.A. Cantab.
- GOODMAN, P. T. (1890). 75, Brick Lane, Spitalfields.
- GORDON, B. (1881). 11, Manor Park Parade, Lee.
- GORNALL, J. G. (1888). Holly Bank, Latchford, Warrington, M.A., M.B., B.C., D.P.H., Cantab.
- GORST, H. (1878). Huyton, Liverpool.
- GOULSTON, A. (1877). 2, Homefield Place, Heavitree, Exeter. M.A. Cantab.
- GOVER, H. J. (1875). Littlebury, Saffron Walden, Essex. M.A., M.B. Cantab.
- GOVER, L. D. (1884). 30, Bernard St. Russell Square.
Clin. Asst. Ear Dept.
- GRABHAM, G. W. (1854). Mathyns, Witham, Essex. M.D. Lond.; M.R.C.P.
1855. Matriculation Scholarship.
- GRABHAM, M. (1888). Kingston, Jamaica, W. Indies. M.B., B.C. Cantab.
- GRABHAM, M. C. (1858). Madeira. M.D. Aberd.; F.R.C.P. Lond. H.S.
- GRAHAM, A. G. (1893). 9, Rose Hill Terrace, Brighton.
- GRAHAM, J. C. W. (1896). Addenbrookes Hospital, Cambridge. B.A., Cantab. A.H.S.
- GRAHAM, V. (1889). Westbrook House, Aston Village, Birmingham.
- GRANT, A. J. (1888). 6, Queen's Club Terrace, West Kensington. M.D. Brux.
Clin. Assist. Throat Dept.
- GRANT, J. H. S. (1892).
- GRANT, J. W. G. (1884). Cardiff Infirmary.
- GRANT-WILSON, C. W. (1887). St. Winnows, Bromley, Kent.
Obst. H.P.
- GRAY, C. (1855). Maj. R.A.M.C. (retired).
- GRAYDON, A. (1886). 73, Talbot Road, Bayswater.
- GREAVES, C. A. (1860). 84, Friar Gate, Derby. M.B., LL.B. Lond.
1861. 1st Year Student, Treasurer's Prize.
1862. 2nd Year Student, 2nd Coll. Prize; Physical Society's Prize.
1863. 3rd Year Student, 1st Coll. Prize; Physical Society's Prize;
Cheselden Medal.
H.S., R.A.
- GREAVES, F. L. A. (1892). 84, Friar Gate, Derby.
H.S., A.H.S.
- GREAVES, H. (1888). Hankelow, Audlem, Chesh. B.A., M.B., B.C. Cantab.
- GREEN, A. (1886). 1, Walker Terr., Gateshead-on-Tyne. M.B. Durh.
- GREEN, C. D. (1879). The Ferns, South St., Romford, Essex. M.D., B.S. Lond.; F.R.C.S. Eng.; D.P.H. w 1879-80. 1st Year Student, The Wm. Tite Scholarship.
s 1880. 3rd Coll. Prize.
w 1880-1. 1st Coll. Prize.
s 1882. 1st Coll. Prize.
H.S., A.H.S., H.P., A.H.P., R.A.
- GREEN, E. C. (1877). 27, Friar Gate, Derby.
- GREENE, F. W. (1852). Isipingo, Durban, Natal.
- GREENFIELD, W. S. 7, Heriot Row, Edinburgh. M.D., F.R.C.P. Lond.; F.R.C.P. Edin.; F.R.S.E.; Prof. of Path. and Clin. Med. Univ. Edin. Assist. Phys., Med. Registr., and Lect. on Path. Anat.
- GREENWOOD, J. W. (1867). Peel House, Hanley, Staffs. M.D. St. And.
- GREG, A. H. (1895). B.A., M.B., B.C. Cantab.
H.P., H.S., A.H.S.
- GREGORY, S. (1880). Hadfield House, Birchanger Road, South Norwood.
- GRESSWELL, G. (1889). 395, Cleethorpe Rd., Gt. Grimsby, Linc. M.A. Oxon.; M.A. Cape of Good Hope.
- GRIEVE, W. D. (1885). 79, Buccleuch St., Dumfries. M.B., C.M. Edin.
- GRIFFITH, A. L. (1856). 606, Harrow Road. M.D. St. And.
- GRIFFITHS, F. A. (1855). Ingleton Yorks.
- GRIMBLY, R. H. (1872). Newton Abbott, S. Devon.
- GROOME, W. W. (1876). Suffolk House, Maple Road, Surbiton. B.A., M.D. Cantab.
H.P., A.H.P.
- GROSE, S. (1856). Valetta, Thurlow Road, Torquay. M.D. St. And.; F.R.C.S. Staff-Surg., R.N. (retired).
- GRÜNBAUM, A. S. F. (1887). 67, Rodney Street, Liverpool. Univ. Coll., Liverpool. M.A., M.D., B.C., Cantab.; M.R.C.P.
1893. Grainger Testimonial Prize.
H.P., Clin. Assist. Skin Dept.
- GURNEY, H. (1880). Stour House, Dovercourt, Essex. J.P.

- GUTHRIE, T. C. (1895). Belmont, Tunbridge Wells. M.B., C.M. Edin.
- HACON, E. D. (1836). 269, Mare St., Hackney. F.R.C.S. (retired).
- HAGUE, J. T. (1874). 320, Brixton Road.
- HAGUE, S. (1862). 325, Southampton Street, Camberwell. A.B., LL.B. Lond.; M.D. St. And.
1863. 1st Year Student, 2nd Coll. Prize. Medical Registrar.
- HAIG, F. M. (1882). South Nutfield, Surrey. M.A., M.D., B.C. Cantab. H.P.
- HAIG-BROWN, C. W. (1877). Dean Lodge, Godalming, Surrey. M.D., C.M. Aberd. Med. Off. Charterhouse Sch.
s 1878. 1st Year Student, 2nd Coll. Prize. w 1878-9. 2nd Year Student, 2nd Coll. Prize. w 1880-1. The Cheshelden Medal. H.P., A.H.P., H.S., A.H.S.
- HAINES, A. (1886). St. Just, Tenbury, Worc.
- HAINES, E. (1890). Raughmere, Lavant, Chichester. Surg. R.N.
- HAINWORTH, E. M. (1888). 16, Albion Street, Hull. M.D., B.S., B.Sc. Lond., F.R.C.S. Hon. Assist. Surg. Royal Infirmary.
w 1888-9. 1st Year Student, 1st Entrance Science Scholarship.
s 1889. 1st Year Student, 2nd Coll. Prize. w 1890-1. 3rd Year Student, 1st Coll. Prize.
s 1891. 3rd Year Student, 1st Coll. Prize. H.S., A.H.S., H.P.
- HAKIM, H. M. (1880). Surg.-Maj. I.M.S., Madras.
- HALL, J. B. (1892). 31, Maningham Lane, Bradford. M.A., M.B., M.C. Cantab., F.R.C.S. Edin.; Res. Casualty Off. Gen. Infir. Leeds.
- HALL, J. L. (1873). Maj. R.A.M.C.
- HALL, J. S. (1891). 34, De Vere Gdns. H.S., A.H.S. Opth. H.S. Clin. Asst. Skin Dept.
- HALL, R. H. (1890). Hillside, Headingley Lane, Leeds. M.A., M.B., B.C. Cantab.
- HALL, S. H. (1894). 49, Spencer St., Carlisle. M.B., C.M. Edin.
- HALLAM, S. R. (1886). 14, Huntingdon Street, Barnsbury.
- HALLILAY, R. P. (1887). Moorland Lodge, Leeds.
- HALLIWELL, T. O. (1889). Manor Place, Dewsbury, Yorks. Clin. Asst. Throat Dept.
- HAMERTON, G. A. (1869). 3, Southampton St., Covent Gdn. M.D. Brux.; F.R.C.S. Eng. D.P.H.
- HAMMOND, J. H. (1847). 11, Winckley Square, Preston, Lanc. M.D. Aberd.; M.R.C.P., J.P. 1850. Medical Cases, President's Prize.
- HANBURY, W. R. (1889). Co. Asylum, Brentwood, Essex.
- HANLY, E. (1886). Almagro, Haywards Heath, Sussex. M.D., M.Ch. R.U.I. M.D., Buenos Ayres, M.R.C.P.
- HANSON, J. (1877).
- HANWELL, G. L. (1888). 1, Blakesley Avenue, Ealing. Clin. Asst. Throat Dept.
- HARCOURT, G. R. (1888). Asst. Med. Off. Lambeth Infirmary. M.B. Lond. Clin. Asst. Skin Dept.
- HARCOURT, J. C. (1891). City of London Union Infirmary. M.B. Lond.
w 1891-2. 1st Year Student. The Wm. Tite Scholarship.
s 1892. 1st Year Student, 2nd College Prize.
s 1893. 2nd Year Student, 1st College Prize.
s 1894. 3rd Year Student, 1st College Prize.
- HARDING, H. W. (1889). Stanley Villa, Rushey Green, Catford. M.B. Lond. H.S., A.H.S.
- HARDING, J. A. (1857). Osman House, 118, Cromwell Rd., Bristol (retired). 1859. Clinical Medicine, 2nd Prize.
1860. Clinical Assistant (Medicine), 1st Prize.
- HARDWICK, H. G. C. (1889). B.A. Cantab.
- HARDYMAN, C. E. (1866). Hill House, Bramerton, Norwich (retired). M.D. Durh.; F.R.C.S. Edin.
- HARE, E. H. (1872). Lightcliffe House, Hornsey. M.A. Oxon.; F.R.C.S. Eng. A.H.P.
- HARE, F. W. E. (1875). St. George's Club, Hanover Sq. M.D. Durh.
- HARFORD-BATTERSBY, C. F. (1887). 14, Earlham Grove, Forest Gate. M.A., M.D., B.C. Cantab.
- HARLEY, J. 9, Stratford Place. M.D., F.R.C.P. Lond.; Cons. Phys. St. Thos. Hosp.; Cons. Phys. Lond. Fev. Hosp.
- HARMAN, L. (1889). Shalmsford, Brixton Hill. M.B. Durh.
- HARPER, J. (1889). Board of Executors' Chambers, Capetown.
- HARPER, J. R. (1886). 3, Union Terrace, Barnstaple, Devon. H.S., A.H.S., R.A., S.O.C.

- HARPER, R. (1842). 18, Park Road, West Dulwich (retired). J.P.
1845. Physical Society's Essay, Prize
Dresser's Clinical Surgery, Prize.
- HARPER, R. R. (1872). Holbeach, Linc.
- HARPER, W. J. (1887). Bloomfield, Braunton, N. Devon.
- HARRIS, F. A. (1874). Maj. R.A.M.C.
- HARRIS, H. A. C. (1892). 8, St. George's Place, Canterbury.
- HARRIS, J. E. (1887). 46, Marsham Street, Westminster. B.A., D.Sc. Lond.
w 1887-8. 1st Year Student, 1st Entrance Science Scholarship.
- HARRIS, R. J. (1893). 154, Drake Street, Rochdale.
- HARRIS, W. (1865). Res. Med. Supert. Norwich City Lunat. Asyl., Hellesdon, Norwich. M.D. St. And., F.R.C.S., M.R.C.P. Edin.
- HARRIS, W. J. (1881). 414, Fulham Road.
- HARRISON, A. (1878). Stoneleigh House, Curry Rivel, nr. Taunton.
- HARRISON, H. M. (1889). Beech House, West Ayton, York. B.A. Cantab.
- HARRISSON, A. E. (1895). High Street, Daventry. B.A., M.B., B.C. Cantab.
- HARTLEY, H. (1878). Stone, Staffords,
- HARVEY, E. (1877). Hamilton, Bermuda, W. Indies.
- HARVEY, S. F. (1875). 117A, Queen's Gate, South Kensington.
- HARVEY, T. (1863). 6, Montague Place, Poplar.
- HARWOOD, H. M. (1896). 9, Stanley Gardens, Notting Hill. M.A., M.B., B.C. Cantab. A.H.P.
- HASLAM, A. C. (1892).
- HASLAM, H. C. (1893). 15, Lindfield Gardens, Hampstead. B.A., M.B., B.C. Cantab. H.P.
- HASLAM, J. N. (1833). Niel Lodge, Dagnall Pk., Selhurst (retired).
- HASLAM, W. F. (1874). 54, Newhall St. Birmingham, and 24, York Road, Edgbaston. F.R.C.S., Demonstr. of Anatomy, Mason Coll. Birmingham, Surgeon, Birmingham General Hospital. Late Examiner in Anatomy for Fellowship R.C.S.
s 1876. 2nd Year Student, 1st Coll. Prize.
w 1877-8. The Cheshelden Medal. Demonstrator of Anatomy, H.P., A.H.P., H.S., A.H.S., R.A.
- HATHAWAY, C. (1836). 11, Edward Road, St. Leonards-on-Sea. M.D. Aberd.
- HATHERELL, R. R. (1884). Hatch Beauchamp, Somers. M.A. Cantab.
- HATTON, G. S. (1875). Hanover House, Newcastle - under - Lyme. M.D., M.S. Durh.; F.R.C.S. Edin.
w 1874-7. 2nd Year Student, Prosector's Prize. H.P., A.H.P.
- HAVILAND, A. Ridgemount, Frimley Green, Surrey.
Late Lect. on Geography of Disease.
- HAWARD, H. H. (1890). Castleton, Northwich, Cheshire. B.A., M.B., B.C. Cantab.
Clin. Asst. Skin Dept.
- HAWKINS, C. L. (1897). B.A., M.B., B.C. Cantab
w 1899-00. The Bristowe Medal. A.H.S., Clin. Asst. Throat Dept.
- HAWKINS, H. P. (1882). 56, Portland Place. M.A., M.D. Oxon., F.R.C.P., Phys. and Jt. Lect. on Medicine St. Thos Hosp.
w 1882-3. 1st Year Student, The William Tite Scholarship.
w 1883-4. 2nd Year Student, The Peacock Scholarship.
w 1884-5. 3rd Year Student, 2nd tenure of Peacock Scholarship and 1st Coll. Prize.
Res. Asst. Phys., H.P., A.H.P., Demonstr. of Pract. Med. and Morbid Histology. Jt. Lecturer on Pathology, Dean of Med. School.
Travelling Fellow, Oxford, 1886.
- HAWKINS, W. (1870). Broadway, Dorchester.
- HAYASHI, K. (1892). Tokyo, Japan.
- Haydon, T. H. (1888). Marlborough. B.A., M.B., B.C. Cantab.
H.S., A.H.S., Obst. H.P. and Demonstr. of Pract. Surg.
- HAYFORD, E. J. (1885). Wilberforce St., Freetown, Sierra Leone. M.D. Brux.
- HAYMES, H. E. (1891). Lt. R.A.M.C.
- HAYWARD, J. (1857). 21, Sutherland Avenue, Maida Vale.
- HEARD, W. N. (1890). B.A. Cantab.
- HEAVEN, J. C. (1879). 17, Whiteladies Road, Clifton, Bristol. D.P.H., Lect. on Hygiene S. Kensington, and Demonstr. of Hygiene Univ. Coll. Bristol.
- HEAVISIDE-WHITMARSH, R. P. (1889). 7, St. Michael's Place, Brighton. M.D. Brux.
- HEDLEY, E. W. (1896). M.A., M.B., B.C. Cantab.
A.H.P.
- HEELIS, R. (1876). 33, Church Street, Lenton, Nottingham. M.D. Durh.
s 1877. 1st Year Student, 2nd Coll. Prize.
s 1878. 2nd Year Student, 2nd Coll. Prize. A.H.P.

- HEFFERNAN, H. H. (1883). Rose-dale, Wolston, near Coventry.
w 1883-4. 1st Year Student, 2nd Coll. Prize.
- HEFFERNAN, W. H. (1881). Alma Villa, Victoria Road North, Southsea.
- HEIN, G. G. B. (1884). Peterson Road, Wakefield.
- HELSHAM, H. P. (1882). Beccles, Suffolk.
- HELSHAM, W. M. (1882). Richmond, New South Wales.
- HEMINGWAY, J. (1885). 16, Merton Road, Wimbledon.
- HENDERSON, W. D. (1884). Regent Street, Kingswood, Bristol.
- HENRY, R. (1885). Graffham, Petworth, Sussex.
- HENSLOWE, F. W. D. (1871). Elm Tree Villa, Victoria St., Dunstable, Beds.
- HERBERT, W. (1890). 49, Ullet Road, Liverpool.
- HERSCHELL, G. (1874). 76, Wimpole Street. M.D. Lond.
- HEWAN, J. (1880). Cinnamara P.O., Jorhât, Upp. Assam, India.
- HEWETT, J. W. (1888). Medical Missionary, China Inland Mission, Pingyang, Shansee. A.H.S.
- HEWITT, H. E. (1893). 80, Heathfield Road, Croydon. M.B., B.S. Lond. D.P.H. Camb.
w 1893-4. 1st Year Student, 2nd Entrance Scholarship, Tite Scholarship. s 1894. 1st Year Student, 1st College Prize.
w 1894-5. 2nd Year Student, Musgrove Scholarship.
w 1895-6. 3rd Year Student, 2nd tenure of Musgrove Scholarship and 1st College Prize.
s 1896. 3rd Year Student, 1st College Prize.
w 1897-8. 5th Year Student, The Treasurer's Gold Medal.
H.P. Clin. Assist. Throat Dept.
- HEYGATE, F. N. (1874). The Elms, Wisborough Green, Billingshurst.
- HEYGATE, W. N. (1861). 12, Bennett Street Circus, Bath. R.A.
- HEYWOOD, C. C. (1887). Irlam's-o'-th'-Height, nr. Manchester. M.A., M.B., B.C. Cantab.
s 1888. 3rd Year Student, 2nd Coll. Prize
Clin. Asst. Throat Dept.
- HICHENS, P. S. (1892). Rossclare Sanatorium, Killadeas, Co. Fernanagh. M.A., M.B., B. Ch. Oxon., M.R.C.P.
w 1893-4. 3rd Year Student, 1st College Prize.
H.P. Ophth. H.S.
- HICKS, T. W. (1887). Park House, East Finchley. M.B. Lond.
H.P. Obst. H.P., Clin. Asst. Throat Dept.
- HIGHTON, T. (1869). Green Hill House, Normanton Road, Derby. H.P.
- HILEY, R. F. (1884). Sidapur, Coorg, India.
- HILL, D. P. S. (1892). Larne, co. Antrim. M.B., B.Ch., B.A.O., R.U.I.
- HILL, E. B. (1883). Royal Hospital, Richmond. B.A., M.B., B.C., Cantab.
- HILL, R. A. L. (1890). Athole Houe, Merton Rd., Wimbledon.
- HILLIAM, W. P. (1893). Wyke, nr. Bradford, Yorks.
- HILLVER, W. H. (1882). Blythburgh, Polworth Road, Streatham.
- HINDLEY, G. J. D. (1895). 72, Queen's Road, Dalston. B.A. Oxon. Obst. H.P.
- HINNELL, J. S. (1882). 62, Garland Street, Bury St. Edmund's. B.A., M.D., B.C. Cantab. Ophth. Asst.
- HISLOP, W. J. H. (1898). 59, Amhurst Road, Hackney. M.B., C.M. Edin.
- HITCHCOCK, H. K. (1866). Christowell, Branksome Park, Bournemouth. M.D. Brux.; J.P.
- HOAR, C. (1879). The Grove, Robertsbridge, Sussex. M.B., C.M. Aberd.
- HOBAN, T. (1893). 15, Uxbridge Rd., Surbiton. M.B. Lond.
Jun. Ophth. H.S.
- HOBHOUSE, E. (1884). 36, Brunswick Place, Brighton. M.A., M.D., B.Ch. Oxon.; M.R.C.P.
w 1885-6. 3rd Year Student, 2nd Coll. Prize. H.P., A.H.S.
- HOCKRIDGE, T. G. (1879). 27, Tysoe St., Wilmington Sq., M.D., C.M. McGill, Montreal.
- HODGES, H. B. (1853). Glenaveril, Knebworth, and Watton Cottage, Watton, Herts.
- HODGES, H. C. (1878). Watton-at-Stone, Herts.
- HODGSON, C. (1887). Leyburn, Streatham.
- HODGSON, W. (1871). Gatefield House, Crewe, Chesh.
- HODSON, T. (1858). Ingatestone, Essex.
- HOLBERTON, H. N. (1876). Chetwynd, Palace Road, East Molesey, Surrey. M.D. Durh., D.P.H.
w 1876-7. 2nd Entrance Science Scholarship, and 2nd Coll. Prize.
w 1877-8. 2nd Year Student, 1st Coll. Prize. A.H.P.
- HOLDING, C. (1829). F.R.C.S.
- HOLLAND, E. W. (1878). B.A. Cantab.

- HOLLOWAY, R. (1876). Edgecumbe House, Brockhurst, nr. Gosport.
- HOLMES, E. R. (1895). Russell House, Shifnal, Salop. M.B., C.M. Edin.
- HOME, A. L. (1889). Kingsbury, Warwickshire. M.B., B.S. Lond. w 1894-5. Bristowe Medal H.S., A.H.S. Obst. H.P.
- HOOD, N. L. (1891). Castlegate House, York. M.A., M.D., B.C. Cantab.
- HOOPER, A. W. (1889). Ashdene, Burnt Ash Hill, Lee. Capt. R.A.M.C.
- HOOPER, J. H. (1857). 139, Burnt Ash Hill, Lee. M.D., M.S. Lond.; F.R.C.S. 1859. 2nd Year Student, Coll. Prize.
- HOPE, G. (1881). Beaconsfield House, Uxbridge Road, Hanwell. D.P.H.
- HOPE, P. L. (1893). Fairlea, Hampton Wick.
- HOPKINSON, E. (1893). 9, Holywell, Oxford. M.A., M.B., B.Ch. Oxon. Ophth. H.S. Clin. Asst. Ear Dept.
- HORLEY, W. L. (1851). Stanboroughs, Hoddesdon, Herts. (Retired).
- HOUGH, C. H. (1875). Full St., Derby.
- HOUGH, J. (1836). Grange Road, Cambridge. F.R.C.S., J.P.
- HOUGHTON, L. (1873).
- HOULGRAVE, A. (1880). 23, Great George's Rd., Waterloo, Liverpool.
- HOUNSELL, F. C. W. (1881). Dower House, Bugbrooke, Northants. B.A. Cantab. Ophth. Asst.
- HOUSE, F. M. (1883). Katauning, Western Australia.
- HOW, A. B. (1883). Parkhurst, Claygate, Surrey. B.A., Oxon.
- HOWELL, T. S. (1841). The Old Vicarage, Wandsworth.
- HOWLETT, B. F. (1893). 95, Balham Park Road. H.P., A.H.P.
- HOWLEY, E. J. (1889). New Seaham, Co. Durh.
- HUBBARD, A. J. (1876). 69, Barrowgate Road, Chiswick. M.D. Durh.
- HUDSON, E. (1895).
- HUDSON, H. (1882). Wesleyan Mission House, Bishopsgate Within.
- HUDSON, J. S. (1888). 113, Leadenhall Street. M.D. Brux.
- HUDSON, O. H. (1881). Park House, Chesterfield Road, Sheffield.
- HUGHES, A. E. P. (1884). Ophth. H. S.
- HUGHES, R. (1889). Church Street, Fenton, Stoke-on-Trent. M.B. Lond.
- HULBERT, H. H. (1884). B.A. Oxon. H.S., A.H.S., Clin. Asst. Throat and Ear Depts., Asst. Teacher of Pract. Surg.
- HULL, W. (1878). Cootamundra, N. S. Wales. M.D. Lond. w 1878-9. 2nd Entrance Science Scholarship. w 1881-2. The Mead Medal. H.P., A.H.P., H.S., A.H.S., R.A.
- HUME, F. H. (1860). 53, Devonshire Street, Islington. M.D. St. And.
- HUME, F. N. (1871). Med. Superint. Northern Hosp., Winchmore Hill.
- HUNT, J. A. (1872). Brookfield, Borrowash, Derbysh. w 1874. Prosector's Prize.
- HUNT, J. P. (1886). Milwaukee, Wisconsin, U.S.A. Lieut.-Colonel A.M.S. (retired). M.D. Glasg., F.R.C.S.I.
- HUNTELY, L. (1842). 79, Freshfield Road, Kemp Town, Brighton.
- HUSKINSON, H. (1888). Surg. R.N. B.A., M.B. Durham.
- HUTCHINSON, J. A. (1883). Northallerton, Yorks. M.D., M.S. Durh.
- HUTTON, H. R. (1875). 16, St. John Street, Manchester. M.A., M.B. Cantab. Demonstr. of Physiol., Asst. Demonstr. of Pract. Path. and H.P.
- IDESON, J. J. (1857). The Poplars, Colne, Lancash.
- ILES, A. R. (1872). Shutterne House, Taunton, Somers.
- ILLINGWORTH, J. A. (1856). Brig.-Surg. Army (retired).
- INGLIS, W. W. (1863). Regent Villa, Clarence, Bickley, Kent. M.D. Heidelb. 1864. 1st Year Student, 2nd Coll. Prize. 1865. 2nd Year Student, 2nd Coll. Prize. 1866. 3rd Year Student, 3rd Coll. Prize; Cheselden Medal. Medical Registrar and H.S.
- IRVING, D. B. (1879). Vancouver, Brit. Columbia, Canada.
- ISAACS, E. P. (1885). 1, Sinclair Rd., Kensington. Ophth. H.S.
- IVES, R. (1854). Chertsey Lodge, Portswood, Southampton.
- JACKSON, J. (1868). 15, Huntingdon Street, Barnsbury.
- JACKSON, W. M. M. (1884). 17, Charlton Road, Blackheath. M.D., Mich.
- JAFFÉ, C. S. (1887). 138, Sutherland Avenue, Maida Vale. M.D., B.S. Lond. w 1887-8. 1st Year Student, Half 2nd Coll. Prize.
- H.P., Obst. H.P., Clin. Asst. Throat Dept. Salters' Company Research Fellow.

- JAMES, C. H. (1883). Capt. I.M.S.
Bengal.
w 1887-8. Solly Medal and Prize.
H.S., A.H.S., R.A.
- JAMES, F. C. (1889). 48, Tregunter
Road, South Kensington. M.B.
Durh.
- JAMES, J. M. (1885). 647, Queen's
Road, Heeley, Sheffield.
- JAMES, S. (1886). Cooch, Behar,
India.
- JAMESON, A. D. (1895).
S. 1897. 2nd Year Student, 1st College
Prize.
- JARDINE, J. L. (1846). Dedisham,
Slindfold, Sussex.
1850. Medical Reports, Dr. Roots' Prize.
H.S.
- JARVIS, J. (1881). 38, Gay Street, Bath.
- JEFFERSON, A. J. (1874). 2, West St.,
Rochdale. M.D., B.S. Lond.
- JEFFERSON, T. J. (1860). Market
Weighton, Yorks. M.D. Aberd.
H.S.
- JEFFREYS, A. (1886). Giants' Grave,
Briton Ferry, Neath, S. Wales.
- JEFFREYS-POWELL, J. P. (1874). Senny
Bridge, Brecon, S. Wales.
- JENNER, L. L. (1890). 4A, Bloomsbury
Square. M.A., M.B., B.Ch. Oxon.;
M.R.C.P. Supt. of Clinical Labora-
tory, St. Thos. Hosp.
s 1892. 3rd Year Student, 2nd Coll. Prize.
Demonst. of Morbid Histology. H.P.
- JOHNSON, C. G. (1869). Harpur Villa,
Bedford.
- JOHNSON, W. G. (1852). 68, High
Street, Bedford.
1855. Comparative Anatomy, Prize.
- JOHNSTON, G. D. (1879). Georgia St.,
Vancouver, British Columbia, Canada.
w 1882-3. 4th Year, Cheselden Medal.
H.P., H.S., A.H.S., R.A., Ophth. Clin.
Asst.
- JOHNSTON, T. (1878). Eastbourne
Villa, Wildner Road, Ilfracombe.
- JOLLY, S. B. (1879). Godstone House,
West Hill, Sydenham. M.B. Cantab.
- JONAS, H. C. (1891). St. Thomas
Home.
w 1896-7. 5th Year Student, The Mead
Medal.
H.P.
- JONES, A. R. (1892). 32, Wellington
Street, Merthyr Tydfil.
- JONES, A. WENTWORTH. (1885).
Godington, Bicester. M.A. Oxon.
s 1888 3rd Year Student, 1st Coll. Prize.
- JONES, A. WEBB. (1894). F.R.C.S.
w 1895-6. 2nd Year Student, 2nd Coll.
Prize.
H.S., A.H.S. Clin. Assist. Ear Dept.
- JONES, B. S. (1884). 16, Kendoa Road,
Clapham.
- JONES, C. E. (1891). Port Alfred,
Cape Colony.
Clin. Asst. Throat Dept.
- JONES, C. M. (1870). Glantaff House,
Troedyrhiew, Glamorg.
R.A.
- JONES, E. (1855). Ty-mawr, Aberdare,
Glam. J.P.
- JONES, E. J. T. (1880). Ty-mawr,
Aberdare, Glamorg. M.D. Brux.
- JONES, H. T. (1886). Harlech House,
Pembroke, S. Wales.
- JONES, J. T. (1870).
- JONES, R. W. (1864). 77, Vauxhall
Bridge Road.
- JONES, SYDNEY (1850). 18, Portland
Place. M.B. Lond.; F.R.C.S. Eng.;
Consulting Surg. to St. Thos. Hosp.
1851. Matriculation Scholarship, Prize;
1st Year Student, Scholarship.
1852. 2nd Year Student, Scholarship.
Descriptive Anatomy, Prize.
1853. 3rd Year Student, Scholarship.
Late Member of Council, Royal College of
Surgeons. Late Surg. Lect. on Surg., on
Descrip. Surg., Surg. Anat., Ophth. Surg.
and on Comp. Anat., Cur. of Mus.,
Demonst. of Healthy and Morbid Anat. at
St. Thos. Hosp.
- JONES, S. H. (1881). 16, Kendoa
Road, Clapham. M.B., B.S. Lond.;
F.R.C.S.
w 1881-2. 1st Year Student, 1st Entrance
Science Scholarship.
The William Tite Scholarship.
w 1882-3. 2nd Year Student, Half Mus-
grove Scholarship and 1st Coll.
Prize combined.
Prosector's Prize.
w 1883-4. 3rd Year Student, 2nd tenure of
Half Musgrove Scholarship,
with 1st Coll. Prize.
s 1884. 3rd Year Student, Half 1st and 2nd
Coll. Prizes.
w 1884-5. 4th Year Student, The Cheselden
Medal.
Treasurer's Gold Medal.
H.S., A.H.S., Clin. Asst. Ear and Skin
Depts.
- JONES, T. J. (1882). Langstone Court,
nr. Ross, Hereford. B.A. Cantab.,
M.B., C.M. Edin.
- JONES, T. M. (1845). Kilby House,
Loughor, Glamorg.

- JONES, W. W. (1877). Pinehurst, Barlow Moor Rd., Didsbury, Manchester. M.A., M.B. Oxon., B.Sc. Lond. w 1877-8. 1st Year Student; 1st Entrance Science Scholarship; £60; The William Tite Scholarship. w 1877-8. 1st Year Physical Society's Prize. s 1878. 1st Year Student, 1st Coll. Prize. w 1878-9. 2nd Year Student, The College Scholarship. s 1879. 2nd Year Student, 2nd Coll. Prize. w 1879-80. 3rd Year Student, 2nd tenure of Coll. Scholarship, and 1st Coll. Prize. w 1880-1. The Mead Medal; Treasurer's Gold Medal. H.P., H.S., A.H.S., R.A. Radcliffe Travelling Fellow, Oxford, 1880.
- JOTHAM, E. (1843). 270, Camden Road.
- JOTHAM, G. W. (1870). George St., Kidderminster. M.D., C.M. Aberd.
- JULIUS, H. A. (1886). Surg. R.N.
- KAI, HO (1875). 3, Elgin St., Hong Kong, China. M.B., C.M. Aberd.
- KAKA, S. M. (1884). Karachi, India. D.P.H.
- KAPADIA, S. A. (1881). 49, Longridge Road, S. Kensington. M.D. Brux.
- KAVANAGH, P. J. F. (1887).
- KEATES, W. C. (1869). 20, East Dulwich Road.
- KEELE, C. F. (1857). 3, Great Russell Street, Bloomsbury.
- KEELE, G. T. (1851). 81, St. Paul's Road, Highbury.
- KEELE, J. R. (1879). 3, Sussex Place, Southampton.
- KEELLER, H. L. A. (1884). Ymir, W. Kootenay, British Columbia. B.A. Oxon.
- KELLOCK, T. H. (1886). 8, Queen Anne Street. M.A., M.D., B.C. Cantab.; F.R.C.S. Asst. Surg. Middlesex Hosp. and Hosp. for Sick Children. w 1889-90. 4th Year Student: The Cheselden Medal. H.S., A.H.S., H.P.
- KEMPE, C. M. (1859). Chantry House, New Shoreham, Sussex.
- KENNARD, H. P. (1890). Norfolk and Norwich Hospital. M.B., B.S. Durh. Clin. Assist. Ear Dept.
- KENT, P. W. (1890). Arno House, Holton Rd., Barry Dock, Glamorg. H.S., A.H.S., Clin. Asst. Ear Dept.

- KER, J. E. (1880). Asst. Surg., Colonial Hosp., Gibraltar.
- KERR, G. D. (1883). Norland House, Victoria Road, Brighton.
- KERR, J. K. (1876). Glenaltans, Knock, Belfast. M.D., M.Ch. R.U.I.
- KESER, J. S. (1880). M.D. Bâle; F.R.C.S. Eng.; B.Sc. Lausanne.
- KEYWORTH, J. W. (1847). Semaphore, Adelaide, Australia. M.D. Lond. 1848. Materia Medica, Prize; 1849. Midwifery, 3rd Prize; Physical Society's Essay, Prize. 1850. Ophthalmic Reports, a Governor's Prize; Essay on Neuralgia, Mr. Newman Smith's Prize. 1851. Comparative Anatomy, Prize; Clinical Medicine, Prize; Surgical Reports, Prize; Midwifery, Prize; Medical Reports, Prize; Pathology, Prize; Physical Society's Essay, Prize.
- KIDD, H. C. (1881). Bromsgrove, Worc. M.B. Lond.; F.R.C.S. w 1881-2. 1st Year Student, 3rd Coll. Prize. H.S., A.H.S., A.H.P. Clin. Asst. Ear Dept.
- KILHAM, C. S. (1880). 1, Barber Road, Crookesmoor, Sheffield.
- KILNER, W. J. (1869). 218, Ladbroke Grove, N. Kensington. B.A., M.B. Cantab.; M.R.C.P. Electrician
- KILVERT, J. E. (1892). Fieldside, Somerset Road, Ealing. H.S., A.H.S.
- KING, A. (1886). Williston, Fraserburg, Cape Colony. w 1886-7. 1st Year Student, 1st Coll. Prize. s 1887. 1st Year Student, 1st Coll. Prize. s 1888. 2nd Year Student, 1st Coll. Prize. w 1888-9. 3rd Year Student, 3rd Coll. Prize. s 1889. 3rd Year Student, 1st Coll. Prize. w 1889-90. 4th Year Student; Treasurer's Gold Medal. H.P.
- KING, A. F. W. (1889). Capt. I.M.S. Bombay. Clin. Asst. Throat Dept.
- KING, P. (1884). 27, Gay Street, Bath. B.A., M.D., B.C. Cantab.
- KING, T. A. (1895). Bude, Cornwall.
- KINGSFORD, B. H. (1888). Woking, Surrey. M.B. Lond.
- KINLOCH, R. B. (1897). w 1899-00. 5th Year Student, Forensic Medicine Prize, Mead Medal. A.H.P., Clin. Asst. Skin Dept.
- KINNERSLY, G. E. (1888). Choisi, Guernsey.

- KIRKPATRICK, J. (1875). Toronto, Canada. M.D. Toronto.
- KISCH, A. (1861). 61, Portsdown Road, Maida Vale.
- KITCHING, J. L. W. (1878). Cobham, Surrey. D.P.H.
- KNAGGS, R. H. E. (1873). Diego Martin, Trinidad, W. Indies.
- KNIGHT, H. (1888). Eskholme, Shirley, Southampton.
- KNOCKER, W. D. (1889). Lilac Cottage, Half Way Lane, Sidcup. M.B. Lond. Clin. Asst. Skin and Electr. Depts.
- LABEY, J. (1880). The Myrtles, St. Saviours, Jersey.
- LAKE, R. (1880). 19, Harley Street, Cavendish Square. F.R.C.S. Asst. Surg. Royal Ear Hosp., Surg. Laryng. N. Lond. Hosp. for Consumption.
w 1881 2. 2nd Year Student, Prosector's Prize.
Clin. Asst. Ear Dept.
- LAKE, W. W. (1872). Topcroft, Guildford, Surrey. D.P.H. Camb. Obst. H.P.
- LAMB, J. H. (1895). Church Street, Crewkerne, Somerset. M.B., C.M. Edin.
- LAMBERT, F. S. (1885). Balgowan, Newland, Lincoln.
- LAMBERT, T. W. (1887). Kamloops, British Columbia, Canada. M.A., M.B., B.C. Cantab.
H.S., Clin. Asst. Skin Dept.
- LANCASTER, J. (1890). Lt.-Col., I.M.S. Madras.
- LANDON, E. (1871). Surg. A.M.S. (retired).
- ANGLEY, J. I. (1892). 317, Waterloo Road, Hightown, Manchester. M.D. Brux.
- LANGTON, C. B. T. (1883). The Chestnuts, Chertsey. M.D. Brux.
- LANKESTER, A. C. (1885). C.M.S. Medical Mission, Peshawur, India. M.D. Lond.
w 1885-6. 1st Year Student, 1st Coll. Prize.
w 1886-7. 2nd Year Student, Half 1st and 2nd Coll. Prizes.
w 1888-9. 4th Year Student, The Cheselden Medal.
H.S., A.H.S.
- LANKESTER, C. P. (1892). Peshawur.
- LANKESTER, F. J. (1882). 13, Belvoir Street, Leicester. D.D.S. Penna.; L.D.S.
- LANKESTER, H. (1849). 8, Salisbury Road, Leicester. J.P.
1850. 1st Year Student, Scholarship: Descriptive Anatomy, 1st Prize; Chemistry, Prize.
1851. Physiology, Prize;
Materia Medica, Prize;
Medicine, Prize;
1852. 3rd Year Student, Scholarship; Medical Cases, President's Prize; Medicine, Prize;
Surgery, Prize;
Surgery and Surgical Anatomy, Cheselden Medal;
General Proficiency, Treasurer's Medal.
1853. Surgical Essay, President's Prize. H.S.
- LANKESTER, H. H. (1880). Church Missionary Society, Salisbury Sqre. M.D. Lond.
w 1880-1. Entrance Science Scholarship; 1st Year Student, 2nd Coll. Prize.
w 1881-2. 2nd Year Student, The College Scholarship, Two Years. H.P., R.A.
- LASLETT, M. H. (1890). H.M. Dockyard, Chatham.
- LATTER, C. (1888). 10, Earl's Avenue, Folkestone. B.A., M.D., B.C. Cantab.
w 1890-1. 4th Year Student, The Mead Medal.
H.P., Obst. H.P.
- LAUCHLAN, C. A. (1890). 43, Clapham Road. M.D., C.M. Montreal.
- LAVER, A. H. (1869). 1, Rutland Park, Sheffield. M.D. Durh.
1870. 1st Year Student, 3rd Coll. Prize.
1871. 2nd Year Student, 2nd Coll. Prize.
w 1872. 3rd Year Student, 2nd Coll. Prize. Cheselden Medal.
H.S., H.P.
- LAVER, H. (1854). Head Street, Colchester. J.P.
- LAVER, J. W. (1889). High Street, Dedham, Colchester.
H.P., Clin. Asst. Skin Dept.
- LAVER, P. G. (1886). Head Street, Colchester.
- LAW, R. R. (1889). The Maples, Sidcup, Kent. B.A., M.D., B.C. Cantab.
H.S., A.H.S., Clin. Asst. Skin Dept.
- LAWFORD, J. B. (1879). 99, Harley St., Cavendish Square. M.D. C.M. McGill, Montreal; F.R.C.S., Ophth. Surg. and Lect. on Ophthalmology St. Thos. Hosp. Surg. Roy. Lon. Ophth. Hosp.
Ophth. Clin. Asst., A.H.P.
- LAWRIE, T. H. (1889). St. Clair, Polmont, Stirlingsh.
- LAWES, C. U. (1886). 1, St. George's Terrace, Newcastle-on-Tyne. M.D. Durh.

- LAWES, W.G. (1888). 3, East Circus St., Nottingham. M.B., C.M. Edin.; F.R.C.S.
Ophth. H.S.
- LAWSON, R. (1889). 1, Marius Rd., Balham.
Clin. Asst. Skin Dept.
- LAWTON, H. A. (1868). 98, High St., Poole, Dorset. M.D. Durh.; D.P.H.
- LAYTON, F. G. (1890). The Lawn, Ablewell St., Walsall, Staffs.
H.P. Clin. Asst. Ear Dept.
- LEATHAM H. B. (1874). New Plymouth, New Zealand.
- LEATHES, J. B. 10, Park Mansions, Battersea. M.B., B.Ch. Oxon., F.R.C.S., Lecturer on Physiology.
- LEDYARD, W. E. (1870). 231, Post Street, San Francisco, California, U.S.A. B.A., M.B. Toronto.
- LEES, J. (1859). 21, Brixton Rd. M.D. St. And.
Demonstr. of Morb. Anat., Asst. Res. Med. Off., Med. Tutor and Registrar.
- LEESON, J. R. (1871). Clifden House, Twickenham, Middlesex. M.D., C.M. Edin.
Demonstr. of Anat. and H.P.
- LEICESTER, T. (1880). The Cedars, 7, East Dulwich Road, East Dulwich.
- LESSEY, S. S. (1878). Carisbrooke House, Carisbrooke, I.W. M.D. Durh.
- LEVICK, H. D. (1887). 132, St. Paul's Terrace, Newport Road, Middlesborough. M.B., B.S. Lond.; F.R.C.S. Jun. Obst. H.P.
- LEWELLIN, A. J. R. (1877). Melbourne, Victoria, Australia. M.B., B.Ch. Melb.
- LEWERS, T. R. (1880). Lyntonstowe, Berry, New South Wales. M.B., B.Ch. Melbourne.
- LEWIS, C. M. (1881). Steyning, Sussex.
- LEWTAS, J. T. (1885). Lt.-Col. I.M.S. Bengal. Jun. Army and Navy Club, St. James's St. M.D., Lond.
- LIBBY, H. S. (1892).
- LIEBREICH, R. 44, Avenue Victor Hugo, Paris.
Ophth. Surg.
- LIGHT, E. M. (1880). 2, Wilton Place, Belgrave Square. M.A., M.B., B.C. Cantab.
Clin. Asst. Throat Dept.
- LIGHTFOOT, W. S. (1872). Staff-Surg. R.N.
- LINDLEY, L. H. (1891). 58, Brook Street, Grosvenor Sq. M.A., M.B., B.Ch. Oxon.
Clin. Assist. Throat Dept.
- LINDSAY, H. S. (1885). Longreach, Queensland.
- LINGARD, A. (1870). Imperial Bacteriologist, Muktesar, Kumâon Hills, N.W.P., India. M.B., M.S. Durh.; D.P.H. Camb.
H.P.
- LITHGOW, J. M. (1880). 39, Humberstone Road, Leicester. M.D., M.Ch. R.U.I.
- LITTELJOHN, S. G. (1864). Res. Med. Off. Central Lond. Distr. Schools, Hanwell. M.B., C.M. Edin.
- LIVESEY, E. W. (1885). The Square, Alderney, Channel Islands.
- LLEWELLYN, D. W. H. (1878). Southborough, Tunbridge Wells.
- LLOYD, A. (1857). 25, Larkhall Rise, Clapham.
- LOCK, J. L. (1897). Herschel House, Cambridge. M.A. Cantab.
w 1899-00. 5th Year Student, Pharmacology Prize.
- LOCKYER, C. W. (1886). 7, St. Julian's Farm Road, West Norwood.
- LODGE, P. G. (1893). 110, Preston Street, Listerhills, Bradford, Yorks.
- LODGE, S. (1888). 28, Manor Row, Bradford, Yorks. M.D., B.S. Durh.
- LOGAN, R. R. W. (1883). Ashby-de-la-Zouch.
- LONGINOTTO, M. J. (1889). Highbeach, Wickham Road, Brockley.
- LONGMAN, A. (1877). Broad Chalk, Salisbury.
- LONGSTAFF, G. B. (1873). Highlands, Putney Heath, and Twitchen, Morthoe, N. Devon. M.A., M.D., D.P.H. Oxon.; F.R.C.P.; L.C.C.
w 1873-4. 1st Year Student, 2nd Coll. Prize.
s 1874. 1st Coll. Prize.
Physical Society's 1st Year's Prize.
s 1875. 2nd Year Student, 2nd Coll. Prize.
w 1875-6. 3rd Year Student, 1st Coll. Prize.
w 1876-7. 4th Year Student, Mead Medal.
- NONON, F. (1894). Fern House, 77, Denmark Hill. L.D.S.
- LOTZ, H. J. (1882). Freemantle, West Australia. D.P.H. Camb.
- LOW, H. (1885). 10, Evelyn Gardens, South Kensington. M.A., M.B., B.C. Cantab. Anæsthetist St. Thomas's Hospital. Tel. Linificus, London.
H.P., R.A., S.O.C., Clin. Asst. Skin Dept.
- LOW, P. C. (1886). Elmstead, Beulah Road, Tunbridge Wells, Kent. B.A., M.B., B.C. Cantab.
- LOW, R. B. (1872). Local Govt. Bd., Whitehall and Helmsley House, Christchurch Road, Tulse Hill. M.D., C.M. Edin.; D.P.H. Cantab.
- LOWE, H. (1893).

- LUARD, H. B. (1885). Capt. I.M.S. Bengal. B.A., M.B., B.C., D.P.H. Cantab. F.R.C.S.
s 1886. 3rd Year Student, 2nd Coll. Prize. H.P., R.A.
- LUCAS, G. (1863). Uckfield, Sussex.
- LUCAS, S. A. (1893).
H.S., A.H.S.
- LUNN, J. R. (1874). Med. Superint. St. Marylebone Infirm., Notting Hill. F.R.C.S. Edin.
H.S., R.A., A.H.S., A.H.P.
- LUSH, J. S. (1872). Ivy Cottage, Market Lavington, Devizes, Wilts.
s 1873. 1st Year Student, 3rd Coll. Prize
- LUSH, W. H. (1869). Prospect House, Market Lavington, Devizes, Wilts.
w 1872. 2nd Year Student, Prosector's Prize.
- LYNCH, G. W. A. (1882). Suva, Fiji.
B.A., M.B., B.C. Cantab. J.P.
- LYON, T. G. (1878). 1, Victoria Square, Pimlico. M.A., M.D. Cantab.; M.R.C.P.
H.P., Clin. Asst. Skin and Ear Dept.
- MACAULEY, W. G. R. (1888). Kings Lynn, Norfolk.
- MCCLEAN, J. F. (1893). British Seamen's Hospital, Constantinople.
s 1895. 2nd Year's Student, 1st Coll. Prize. H.S., A.H.S., Obst. H.P.
- MACCORMAC, Sir William, Bart. K.C.V.O. 13, Harley Street, Cavendish Square. M.A.R.U.I. M. Ch. (hon. causâ). D. Sc., F.R.C.S.I.; Pres. R.C.S. Eng. Cons. Surg. to St. Thomas's Hospital; Emeritus Lecturer on Clinical Surgery. Surgeon, Jt. Lect. on Surgery.
- MCCULLAGH, R. C. (1887). 179, Shankhill Rd., Belfast. B.A., M.D., M.Ch., M.A.O., R.U.I.
- MCDONELL, J. O'M. (1879). Lt.-Col. I. M.S. Bengal (retired). M.D., M.Ch. R.U.I.; F.R.C.S.
- MCDONOGH, J. J. O'GORMAN (1896). Royal Army Medical Mess, Curragh.
- MCDougall, W. (1894). St. John's Coll., Camb. M.A., M.B., B.C. Cantab.; M. Sc. Vict.
w 1894-5. 3rd Year Student, University Scholarship.
w 1896-7. 5th Year Student, Grainger, Testimonial Prize. H.P.
- MCDOWELL, D. K. (1886). c/o Messrs. Holt & Co., 17. Whitehall Place.
- MACEVOY, H. J. (1882). 41, Buckley Road, Brondesbury. M.D., B.Sc. Lond.
w 1884-5. 3rd Year Student, Half 2nd and 3rd Coll. Prizes.
s 1885. 3rd Year Student, Half 1st and 2nd Coll. Prizes.
w 1885-6. 4th Year Student, Bronze Mead Medal.
H.P., R.A., Clin. Asst. Throat and Ear Depts.
- MCGEAGH, W. S. (1880).
- MACGREGOR, R. D. 240, Hoxton Street, N.
- MCILROY, J. B. (1887). Annandale, Sydney, New South Wales.
- MAC KELLAR, A. O. 79, Wimpole Street, M.D., M.Ch., R.U.I., F.R.C.S. Surgeon, Res. Asst. Surg. Lect. on Forensic Medicine, and Practical Surgery.
- MACKENZIE, H. W. G. (1882). 59, Welbeck St., Cavendish Square. M.A. Edin.; M.A., M.D. Cantab.; F.R.C.P. Lond.; Physician to St. Thomas's Hospital and to the Hosp. for Consumption, Brompton; Demonstrator of Morbid Anatomy; Lecturer on Pharmacology and Therapeutics at St. Thomas's Hospital.
w 1882-3. 3rd Year Student, 3rd Coll. Prize.
s 1883. 3rd Year Student, 1st Coll. Prize.
w 1883-4. 4th Year Student. The Mead Medal.
Demonst. of Pract. Med., Resident Assistant Physician, Medical Registrar, H.P., A.H.P., and Clin. Asst. Skin Department.
- MACKINNON, A. D., C.M.G. (1887). Uganda, Brit. E. Africa. M.D., C.M. Aberd.
- MACKRETH, J. F. Keyingham, Holderness, Hull.
- MC LAUGHLIN, E. H. (1872). 45, Jeffreys Rd., Clapham Rd.
- MC LOUGHLIN, E. P. (1893). 427, Barking Road, Plaistow. B.A., M.B., B.Ch., B.A.O., R.U.I.
- MACLEAN, A. (1869). 24, Harwood Road, Fulham.
- MACLEAN, H. H. (1878).
- MACNAMARA, J. T. (1881). 50, Union Road, Rotherhithe.
- MAC RAE, F. (1888). 27a, Lowndes St., Belgrave Sq. M.B., C.M. Aberd.
- MADDEN, T. P. (1877). Falmouth, Jamaica, M.D., M.Ch.R.U.I.
- MADDICK, E. D. (1874). 2, Chandos St., Cavendish Sq., F.R.C.S. Edin.
- MAILE, C. E. D. (1873). Dedham House, Dedham, Essex.

- MAKINS, G. H. (1871). 47, Charles Street, Berkeley Square. F.R.C.S. Surg., and Joint Teacher of Op. Surg. St. Thomas's Hospital; Exam. for Navy Medical Service; Cons. Surg. Evelina Hospital.
Dean of Med. School, Lecturer on Anatomy, Surg. Registr., Res. Asst. Surg., H.P., H.S.
- MANLEY, W. G. N. (1850). C.B., V.C. Surg.-Gen. R.A.M.C. (retired). 3, Lansdowne Terrace, Cheltenham.
- MANNERS, W. F. (1881). Pewsey, Wilts. B.A. Cantab.
- MANSEL-HOWE, S. I. (1871). Athelby, Hillbury Rd., Tooting. M.D. Brux. H.P., R.A.
- MANUK, M. W. (1898). Lt. I.M.S. M.B., C.M., Edin.
- MAPLES, R. (1870). Tower Hill House, Kingsclere, Newbury, Berks. H.S., R.A.
- MARCH, H. C. (1857). Portesham, Dorchester. M.D. Lond., J.P. 1855. 1st Year Student, Treasurer's 2nd Prize. H.S., R.A.
- MARETT, E. P. (1891). Avranche Manor, St. Lawrence, Jersey.
- MARGENOUT, J. G. (1884). 59, Hayter Road, Brixton.
- MARLOW, F. W. (1876). 401, Montgomery St., Syracuse, New York. M.D. Syracuse.
H.S., A.H.P., Opth. Clin. Asst.
- MARRIAGE, H. J. (1891). 35, Wickham Road, Beckenham. M.B. Lond. w 1893-4. 2nd Year Student, 2nd Coll. Prize. H.S., A.H.S., Surg. Registrar, Clin. Asst. Throat Dept.
- MARRINER, W. H. L. (1878). Craig Vaen, Poole Rd., West Bournemouth. M.B. Lond.
Clin. Asst. Ear and Throat Depts.
- MARSDEN, T. (1877). Larkstone, Ilfracombe, N. Devon. M.D., C.M. Aber.
- MARSH, J. H. (1872). 65, Warwick Road, Earl's Court.
- MARSHALL, A. (1886). 145, London Rd. South, Lowestoft. M.D. Brux.
- MARSTON, F. E. (1877). High Street, Welshpool, Montgomeryshire. A.H.P.
- MARTIN, A. E. (1896). B.A., M.B., B.C. Cantab.
A.H.S., Clin. Asst., Ear Dept.
- MARTIN, C. J. (1884). University, Melbourne, Victoria, Australia. D.Sc., M.B. Lond.
w 1884-5. 1st Year Student, 2nd Entrance Scholarship.
- MARTIN, F. R. (1895). 106, Edith Road, W. Kensington. B.A., M.B., B.C. Cantab.
H.S., 2 mos., Clin. Asst. Ear and Throat Depts.
- MARTIN, J. S. (1896). The Hospital, Rotherham. M.B., C.M. Edin.
- MARTIN, T. H. (1886). The Gables, Crawley, Sussex.
- MARTINEAU, A. J. (1891). 8, Eaton Road, Hove.
s 1892. 1st Year Student, 1st Coll. Prize.
w 1892-3. 2nd Year Student, 1st Coll. Prize.
w 1893-4. 3rd Year Student, 2nd Coll. Prize.
w 1894-5. 4th Year Student, Cheshelden Medal (bronze) and Treasurer's Gold Medal.
H.S., A.H.S.
- MASON, A. E. (1876). 62, Hillfield Road, West Hampstead.
- MASON, F. W. 1888. 9, Witham Place, Boston, Lincs.
- MASON, G. A. (1888). 45, George St., Portman Square. M.A., M.B., B.C. Cantab.
- MASSEY, H. M. (1877). Hillgrove, New South Wales.
- MATHIAS, W. L. (1882). 114, Darlinghurst Road, Sydney, N.S. Wales.
- MATTEI, C. (1882). Perth, West Australia.
- MATTEI, E. (1879). Accra, Gold Coast, West Africa.
- MATTHEWS, C. E. (1885). Med. Superint. Fountain Hosp., Tooting Grove. B.A., M.D., B.Ch. Oxon., D.P.H.
Clin. Asst. Throat Dept.
- MATURIN, B. A. (1883). Maj. R.A.M.C.
- MAUGHAM, W. S. (1802). 27, Carlisle Mansions, Westminster.
- MAUNSELL, D. F. (1888). 67, Earl's Court Road, Kensington.
- MAURICE, O. C. (1856). 75, London Street, Reading. M.D. Heidelb., J.P.
- MAURICE, W. J. (1880). 11, Friar Street, Reading. M.A., M.B., B.Ch. Oxon.
- MAVOR, W. S. (1869). The Cottage, Waltham Cross, Herts. M.D. Durh. J.P.
H.P.
- MAYBURY, A. C. (1861). 19, Bloomsbury Square. D.Sc. Lond.
- MAYBURY, A. V. (1869). Ashford House, Mile End, Landport. M.D., M.Ch. R.U.I.
1870. 1st Year Student, 2nd Coll. Prize.
1871. 2nd Year Student, 1st Coll. Prize.
w 1872. 3rd Year Student, 1st Coll. Prize; Treasurer's Gold Medal.
H.S.

- MAYBURY, H. M. (1868). 27, Almeida St., Islington. M.D., M.Ch. R.U.I. 1869. 1st Year Student. 2nd Coll. Prize. 1871. 3rd Year Student, 3rd Coll. Prize.
- MAYBURY, L. (1874). 9, Hampshire Terrace, Southsea. M.D., M.Ch. R.U.I.
- MAYBURY, W. A. (1866). 9, West Stockwell Street, Colchester, Essex. M.D., M.Ch.R.U.I. 1867. 1st Year Student, 3rd Coll. Prize.
- MAYNARD, E. C. (1877). Arundel Lodge, Worthing.
- MAYNARD, J. C. M. (1854). Erith, Kent. M.R.C.P. Edin., J.P.
- MEACOCK, H. C. (1892). 19, North Brink, Wisbech, Cambridge.
- MEAD, H. T. H. (1856). Christchurch, Hants. (retired).
- MEADOWS, B. (1854). Park Hill, Clapham Park.
- MEADOWS, H. (1866). 33, London Rd., Leicester. M.B., C.M. Edin. 1867. 1st Year Student, The William Tite Scholarship; Phys. Soc. 1st Year's Prize. 1868. 2nd Year Student, Tite Scholarship; Phys. Soc. 2nd Year's Prize.
- MEASURES, J. W. (1868). 67, Oakfield Rd., Stroud Green. (Not practising.)
- MEGGITT, H. (1882).
- MELSMORE, W. S. (1890). 29, Circus, Bath. M.A., M.D., B.C. Cantab., F.R.C.S. Assist. Surg. Royal United Hospital. Late Demonstr. of Anat. Univ. Camb.
- MENNELL, Z. (1874). 1, Royal Crescent, Notting Hill.
- MERCES, J. (1880).
- MERRY, W. J. C. (1890). 2, Chiswick Place, Eastbourne. M.A., M.D., B.Ch. Oxon. H.P., H.S., Clin. Asst. Skin Dept.
- METCALFE, A. W. (1887). 2, St. Leonards, York. M.A., M.D., B.C. Cantab.
- METCALFE, G. (1887). Union Hosp., Eastville, Bristol. M.D., B.S. Durh.
- METCALFE, R. (1856). Leyburn, Yorks. M.D. St. And.
- MICHAEL, H. J. (1874). Maj. R.A.M.C.
- MICKLE, W. J. (1867). Med. Superint. Grove Hall Asyl., Bow. M.D. Toronto, F.R.C.P.
- MIDDLETON, R. W. (1881). Crewe, Cockshot Road, Reigate. M.B., C.M. Glasg.
- MIFSUD, A. E. (1881). 17, Strada Zaccaria, Valetta, Malta.
- MILLAR, A. F. (1893). 308, Lillie Road, Fulham.
- MILLAR, W. H. (1886). St. Helier's, 26, Streatham Hill. M.D. Brux. w 1888-9. 3rd Year Student, 2nd Coll. Prize. s 1889. 3rd Year Student, 2nd Coll. Prize. Clin. Asst. Throat Dept.
- MILLER, F. M. (1864). Northolme, High Road, Upper Clapton.
- MILLER, H. L. (1874). Warrnambool, Victoria, Australia. M.D. Brux.
- MILLER, J. (1877). 136, South Lambeth Road.
- MILLER, J. T. R. (1883). Castlegate House, 78, Castlegate, Malton, and Leavening, Kirkham Abbey, Yorks.
- MILLS, H. W. (1890). Ruardean, Glouc.
- MILLS, R. J. (1873). 35, Surrey St., Norwich. M.B., C.M. Aberd.
- MILLS-ROBERTS, R.A. (1893). Bodafon, Llanberis, N. Wales.
- MILLS-ROBERTS, R. H. (1882). Bodafon, Llanberis, N. Wales. F.R.C.S. Edin.
- MILTON, A. R. O. (1888). Hatton, Dickoya, Ceylon. w 1891-2. 4th Year Student, The Mead Medal. H.P., H.S., A.H.S.
- MILTON, F.R.S. (1884). Surgeon and Professor of Clinical Surgery, Kasr el-Aini Hospital, Cairo, Egypt. H.S., A.H.S.
- MILTON, H. M. N. (1876). Kasr el Aini Hospital, Cairo, Egypt. H.S., A.H.S., H.P., A.H.P.
- MILWARD, F. V. (1891). General Hospital, Birmingham. B.A., M.B., B.C. Cantab. F.R.C.S., Clin. Asst. Skin and Ear Dept.
- MISKIN, E. (1888). Slade House, 173, Kennington Road. M.B. Lond. s 1890. 2nd Year Student, 1st Coll. Prize.
- MISKIN, G. A. (1858). Slade House, 173, Kennington Rd. M.D. St. And.
- MISKIN, L. J. (1889). Kalgoorlie, Western Australia. M.B., B.S. Lond. F.R.C.S. w 1889-90. 1st Year Student, 2nd Coll. Prize. w 1890-1. 2nd Year Student, Half first and 2nd Coll. Prizes. s 1891. 2nd Year Student, 2nd Coll. Prize. H.S., A.H.S.

- MITCHELL, Rev. J. (1865). The Vicarage, Yealand Conyers, Carnforth. Lanc. M.D. St. And. M.R.C.P. Edin.
 1866. 1st Year Student, 2nd Coll. Prize; Phys. Society's 1st Year Prize.
 1867. 2nd Year Student, 2nd Coll. Prize.
 1868. 3rd Year Student, 2nd Coll. Prize. R.A.
- MONTAGUE, A. A. (1891). Suva, Fiji. M.B. Lond.
- MONTAGUE, A. J. H. (1881). 35, Potter St., Worksop. M.D. Durh. H.P., Clin. Asst. Skin Dept.
- MONTGOMERY, W. A. (1888). Oak House, Beckley, East Sussex.
- MOODY, J. M. (1871). Med. Superint. Lond. Co. Asyl., Cane Hill, Purley, Surrey.
- MOORE, H. M. (1888). Capt. I.M.S. Bombay.
 Clin. Asst. Ear Dept.
- MOORE, P. L. (1891). Fountain Hospital, Lower Tooting. M.A., M.B., B.C. Cantab.
- MOORES, S. G. (1882). Capt. R.A.M.C. D.P.H.
- MORETON, J. E. (1849). Tarvin, Chester. F.R.C.S.
 1850. 1st Year Student, Scholarship;
 1852. Physiology, Prize;
 Descriptive Anatomy, Prize;
 Physical Society's Essay, Prize;
 Medicine, Prize;
 Surgery, Prize;
 2nd Year Student, Scholarship.
 1853. 3rd Year Student, Scholarship;
 Physiology, Prize;
 Clinical Medicine, Pres. Prize;
 Clinical Medicine, Treas. Prize;
 Clinical Medicine, Mr. N. Smith's Prize;
 Ophthalmic Surgery, Prize;
 Medicine, Prize;
 Surgery and Surgical Anatomy, Cheselden Medal;
 Gen. Proficiency, Treas. Medal.
 1854. Clinical Med., Dr. Root's Prize. H.S.
- MORETON, R. (1890). Hartford, Cheshire.
- MORETON, T. (1856). Northwich, and Spring Mount, Hartford, Chesh. J.P.
 1857. 1st Year Student, Treasurer's 2nd Prize;
 Matriculation Examination, Classics and Mathematics, Prize.
 1858. Clinical Medicine, Prize. H.S., R.A.
- MORETON, T. W. E. (1885). Tarvin, Chester. B.A. Cantab.
- MORGAN, C. A. (1883). Down Hall, Rippingale, Bourne, Lincs.
- MORGAN, L. W. (1861). The Hafod, Pont-y-pridd, Glamorg. M.D., C.M. Aberd. J.P.
- MORGAN, Ll. A. (1878). 118, Bedford Street South, Liverpool. M.D. Durh.
- MORGAN, S. (1851). 15, Oakfield Rd., Clifton, Bristol. M.D. St. And. 1854. Forensic Medicine, 2nd Prize.
- MORGAN, W. (1872). 3, Adelaide St., Swansea. R.A.
- MORGAN, W. L. G. (1865).
- MORRIS, C. K. (1873). Gordon Lodge, Charlton Road, Blackheath. w 1875. Prosector's Prize.
- MORRIS, E. H. G. (1888). 47, Onslow Gardens, South Kensington. B.A., M.B., B.C. Cantab. Anæsthetist St. Thomas's Hospital. Tel.: "Emphatic London."
- MORRIS, E. W. (1882). Kembla House, Port Adelaide, S. Australia.
- MORRIS, J. E. (1867). Windhill, Bishop's Stortford, Herts. M.D. Durh.
- MORRIS, S. G. Plas cwmtwrch, Nant-garedig, Carmarthen. M.D., C.M. Edin.
- MORTON, J. (1860). Eastgate House, Guildford. M.B. Lond. H.S., R.A.
- MOSS-BLUNDELL, C. B. (1894). Hill-brow, Hampton-on-Thames.
- MOULLIN, J. A. M. (1871). 80, Porchester Terrace, Hyde Park. M.A., M.B. Oxon.; M.R.C.P. H.P.
- MOXON, C. C. (1885). Corn Market, Pontefract.
- MUNRO, A. W. (1882). Liverpool Street, Sydney, N.S. Wales. M.D., C.M. Edin. F.R.C.S.
- MUSSON, A. W. (1887). 15, King St., Clitheroe, Lanc. B.A., M.B., B.C. Cantab.
- MUSSON, W. E. (1849). Mayfield, Clitheroe, Lanc.
 1850. Matriculation Scholarship, Prize.
- MYERS, W. (1894). 225, Hagley Rd., Birmingham. M.A., M.B., B.C. Cantab. B.Sc. Lond.
- NAIRN, R. (1881). Hastings, Napier, New Zealand. F.R.C.S.
 Ophth. Asst., H.P.
- NASH, E. H. T. (1890). Oakfield House, Accrington, Lancsh.
 1896. Solly Medal and Prize. H.P., Clin. Asst. Ear Dept.
- NAUTH, B. (1890). Capt. I.M.S. Madras.
- NEATE, C. P. W. (1855). Stilton, 15, London Road, Forest Hill. F.R.C.P., F.R.C.S. Edin.

- NETTLESHIP, E. 5, Wimpole Street, Cavendish Square. F.R.C.S. Cons. Oph. Surg. St. Thomas's Hospital. Ophth. Surg., Dean of Med. Sch.
- NEWBOULD, N. J. (1878). Abbots Bromley, Rugeley, Staff.
- NEWBY, C. H. (1866). 20, Landport Terr., Southsea, Hants. F.R.C.S. 1870. Prosector's Prize. Surg. Registr., H.S., H.P., R.A., Asst. Demonstr. of Anat.
- NEWHAM, H. B. G. (1893). 62, Sandmere Road, Clapham.
- NEWINGTON, A. S. L. (1872). Woodlands, Ticehurst, Sussex. M.B. Cantab. H.P.
- NEWINGTON, T. (1874). Ridgeway, Ticehurst, Sussex. B.A. Cantab.
- NEWSHOLME, A. (1875). Town Hall, and 11, Gloucester Place, Brighton. M.D. Lond.; F.R.C.P.
w 1875-6. 1st Year Student, 1st Coll. Prize.
w 1876-7. 2nd Year Student, 1st Coll. Scholarship.
s 1877. Ditto 1st Coll. Prize.
w 1877-8. 3rd Year Student, The "College Scholarship," 1st Coll. Prize. H.P., A.H.P., A.H.S., R.A.
- NEWTH, A. H. (1864). Hayward's Heath, Sussex. M.D. Aberd. Mem. Gen. Counc. Univ. Aberd.
- NICHOL, F. E. (1882). 11, Ethelbert Terr., Margate. M.A., M.B., B.C. Cantab.
H.S., A.H.S., Clin. Asst. Skin Dept.
- NICHOLL, E. E. (1893). 3, Stanley Gardens, Kensington Park.
- NICHOLSON, F. (1872). 29, Albion St., Hull. M.D. Lond. Phys. Hull Roy. Infirmary.
w 1873. 1st Year Student, 1st Coll. Prize.
s 1873. Ditto 1st Coll. Prize.
w 1874. 2nd Year Student, 1st Coll. Prize.
s 1874. Ditto 1st Coll. Prize.
w 1875. 3rd Year Student, 1st Coll. Prize; Cheselden Medal;
Mead Medal;
Treasurer's Gold Medal. R.A., H.P., H.S.
- NICHOLSON, T. G. (1889). Palmers, Gt. Marlow. M.B., B.Sc. Lond.
w 1889-90. 1st Year Student, 1st Entrance Science Scholarship. H.P., Clin. Asst. Skin Dept.
- NITCH, C. A. R. (1894). 4, Evelyn Mansions, Victoria Street. Clin. Asst. Skin Dept.
- NIVEN, J. (1878). Public Health Office, Town Hall, Manchester. M.A. Aberd.; M.A., M.B., B.C. Cantab.
- NIX, R. E. (1891). 81, Guildhall St., Bury St. Edmunds. B.A., M.B., B.C. Cantab.
H.P.
- NOLAN, M. J. (1892). 211, Regent Road, Salford, Manchester.
- NORRIS, E. S. (1875). 117, High St., Eton, Bucks. M.A., M.B. Cantab., Med. Registr. and Asst. Demonstr. of Morb. Anat.
- NORRIS, H. L. (1893). Surg. R.N.
- NORTHCOTE, P. (1887). Pyne's Lodge, Price's Avenue, Margate. M.B. London. H.P.
- NORTON, J. J. (1887). Bagnalstown, Co. Carlow. B.A. Dub.
- NOWELL, A. H. (1856). Clarendon House, Mortlake.
- OBORN, H. W. (1885). 28, Hyde Vale, Greenwich.
- O'CONNOR, T. B. (1881). 2, Arlington Street.
- ODDIE, S. I. (1891). 5, St. Helen's Terrace, Hastings. M.B., C.M. Edin. Surg. R.N. (retired).
- ODLING, A. E. (1876). Alford, Linc.
- OGILVIE, J. (1890). Comely Park, Cromer. M.A. Cantab.
- OKELL, J. B. (1880). 2, Magdala Rd., Nottingham.
- OLIVEY, W. J. (1881). Lawlers, West Australia.
- ORANGE, W., C.B. (1853). Bembridge, I.W. M.D. Heidelb., F.R.C.P. Lond.
- ORD, G.R. (1855). 9, Streatham Hill.
- ORD, G. W. (1881). 58, Queen's Rd., Richmond.
- ORD, R. W. (1888). 4, Cambridge Terrace, Dover. M.A., M.B., B.C. Cantab. A.H.S.
- ORD, W. M. (1852). 37, Upper Brook Street. M.D. Lond., F.R.C.P. Cons. Physician to St. Thos. Hosp.
1853. Matriculation Exam. Scholarship
1st Year Student, Scholarship;
Descriptive Anatomy, Prize;
Chemistry, Prize.
1854. 2nd Year Student, Scholarship
Medicine, Prize;
Materia Medica, Prize;
Physiology, Prize.
1855. 3rd Year Student, Scholarship;
Surgery and Surgical Anatomy,
Cheselden Medal;
Forensic Medicine, Prize;
Pathology, Prize;
Practical Chemistry, Prize;
Physiology, Prize;
General Proficiency, Treasurer's Medal.
1856. Registrar, Prize.
Physician, Joint Lecturer on Medicine,
Lecturer on Comparative Anatomy, Physiology, and Practical Physiology, Demonstr.
of Anat., Surg. Registr. and H.S.

- ORD, W.W. (1883). The Hall, Salisbury. M.A., M.D., B.Ch. Oxon. s 1884. 1st Year Student, 2nd Coll. Prize. w 1884-5. 2nd Year Student, Half 2nd Coll. Prize. w 1886-7. 4th Year Student. Mead Medal. H.P., H.S., A.H.S.
- ORFORD, J. (1877). Starfield House, Pontefract, Yorks. H.S., H.P., R.A.
- ORISADIPE OBASA of Ikija (Prince) (1885). Lagos, W. Africa.
- ORONHYATEKHA, A. (1894). 24, Charing Cross. M.D. Toronto.
- OSBORN, S. (1867). 1A, Devonshire Street, Portland Place. F.R.C.S., J.P. Surgeon to the Hospital for Women, Soho Square. 1870. Physical Society, 2nd Year's Prize. Surgical Registrar, H.S., H.P., R.A.
- OSBORNE, A. (1892). 7, Nelson Place, Norfolk Crescent, Bath.
- OSBORNE, F. (1882). Dover Castle.
- OSBURN, H. B. (1884). Bagshot, Surrey. D.P.H. Camb. R.A., S.O.C.
- OWEN, C. W. (1869). C.I.E., C.M.G. Lt.-Col. I.M.S Bengal.
- OXLEY, J. C. S. (1893). Lieut. I.M.S.
- PAGE, F.W.T. (1891). 60, Westbourne Park Villas, Bayswater.
- PALIN, E. W. (1891). The Manor House, Ryburgh, Fakenham, Norfolk. M.A., M.B., B.Ch. Oxon. H.P., Clin. Asst. Ear Dept.
- PALIN, H. V. Wrexham. M.B., C.M. Edin., J.P. Mayor of Wrexham, 1889-90-1.
- PALMER, A. M. (1867). Whittington, Chesterfield.
- PALMER, H. J. (1874). Montague House, Gamlingay, Cambridge.
- PANIOTY, J. E. (1878). 1, Larkin's Lane, Calcutta, India.
- PAPILLON, J. W. (1876). Brent Knoll, Bridgwater, Somers.
- PAPILLON, T. A. (1876). 3, Pevensey Rd., St. Leonard's-on-Sea. F.R.C.S. Edin.
- PARK, J. R. S. (1879). 183, King Street, Dukinfield, Cheshire.
- PARKER, G. R. W. (1885). 19, Derby Lane, Stoneycroft, Liverpool. M.A. Cantab.
- PARKER, G. W. (1860). 11, Brandenburg Road, Chiswick. M.R.C.P. Lond. M.R.C.P. Edin.
- PARKER, R. W. (1860). 13, Welbeck Street, Cavendish Square.
- PARKER, W. T. (1873). 68, Lillie Road, Fulham.
- PARROTT, J. (1869). Stanhoe House, Grove Vale, East Dulwich.
- PARSEY, E. W. (1886). Glenavon, King's Norton, Worc. M.A., M.B., B.C. Cantab.
- PARSON, F. J. (1865). 112, Victoria Street, Westminster.
- PARSON, H. (1869). Bondfield, Bursledon, Hants. (retired).
- PARSONS, A. C. (1892). 27, Darlington Street, Wolverhampton.
- PARSONS, C. O. (1882). 202, Castle Road, Roath, Cardiff.
- PARSONS, F. G. (1881). 17, Micheldever Road, Lee. F.R.C.S., Lect. on Comp. Anat. and Elem. Biol., Lect. and Demonstr. of Anat. at St. Thomas's Hospital. Exam. in Anat. for F.R.C.S., and in Biology for Conjoint Board. Exam. in Anat. and Supt. of Dissections, Apoth. Hall. w 1882-3. 2nd Year, Prossector's Prize. w 1886-7. 6th Year, Grainger Testimonial Prize.
- PARSONS, W. D. (1836). 32, Huskisson Street, Liverpool.
- PATCH, H. H. L. (1885). 17, Castle Street, Hertford.
- PATTIN, H. C. (1883). Municipal Offices, Norwich. M.A., M.D., B.C., D.P.H. Cantab. Med. Off. Health, Norwich.
- PAULING, W. T. (1886). Rhodesia.
- PAYNE, J. F. 78, Wimpole Street. Cavendish Square. B.A., M.D. Oxon.; B.Sc., F.R.C.P. Lond.; Cons. Phys. St. Thos. Hosp. Physician, Joint Lect. on Medicine. Lect. on Pathology and Morbid Anatomy. Radcliffe Travelling Fellow, Oxford.
- PEARCE, F. H. (1893). Bradford Union Hosp., Yorks. B.A. Cantab.
- PEARCE, G. H. (1886). 8, Elm Tree Rd., St. John's Wood. M.A. Camb.
- PEARSE, A. W. (1882). 1, Artillery Mansions, Woolwich.
- PEARSON, H. L. (1883). Bay House, Holt Hill, Tranmere, Birkenhead.
- PEATLING, A. V. (1889). College Gate, Worcester. B.A., M.B., B.C. Cantab.
- PECK, F. S. (1878). Major I.M.S. Bengal.
- PEDLEY, R. D. (1877). 17, Railway Approach, London Bridge. F.R.C.S. Edin.; L.D.S. Demonstr. of Dent. Surg.
- PEGG, J. H. (1892). The Firs, Styvechale, Coventry. B.A. Camb.
- PELL, W. (1884). Riseholme, Wellingboro'.
- PENHALL, J. T. (1852). Broadwas-on-Teme, Worc. (retired). M.D. St. And., F.R.C.S.

- PENTREATH, L. N. (1890). Killarney
Appleford-on-Thames, Abingdon.
M.A. Oxon.
- PERKINS, A. L. (1875). Sketty, Swans-
sea.
- PERKINS, J. J. (1888). 41, Wimpole
Street, M.A., M.B., B.C. Cantab.;
M.R.C.P. Assist. Phys., Joint
Lecturer on Pathology, Demonst.
of Morbid Anatomy, and of Morbid
Histology and Bacteriology, Teacher
of Pract. Med., St. Thos. Hosp.
w 1888-9. 3rd Year Student, 1st Coll. Prize.
H.P.
- PERN, A. (1864). Botley, Southamp-
ton. D.P.H. Camb., F.R.C.S.
- PERN, E. C. (1888). Droxford, Hants.
- PERN, S. (1895). Botley, Hants.
- PERRIN, T. (1893). M.B. Lond.
- PERRY, E. L. (1890). Capt. I.M.S.,
Bengal.
w 1891-2. 2nd Year Student, 2nd Coll. Prize.
w 1892-3. 3rd Year Student, 2nd Coll. Prize.
- PERSHOUSE, FRANK (1889). The
Limes, Tillingham, Southminster,
Essex.
- PERSHOUSE, F. (1886). Asst. Med. Off.
S.-West. Fev. Hosp., Stockwell.
H.P., Clin. Asst. Skin Dept.
- PETMAN, A. P. (1853).
- PETTIGREW, A. J. W. (1871). Church
St., Camperdown, Victoria, Australia.
- PHELPS, A. M. (1873). 37, Compton
Terrace, Highbury. M.A., M.D.
Cantab.
- PHELPS, W. H. G. (1852). Weston-
super-Mare. M.D. Aberd.
- PHILLIPS, A.O.H. (1871). Warwick,
Queensland.
- PHILLIPS, A. S. (1883). 16, St.
Cuthbert's, Bedford.
- PHILLIPS, E. J. M. (1874). 33, Rodney
Street, Liverpool. L.D.S., Hon.
Dent. Surg. Liverp. Roy. Infir.,
Lect. on Dent. Surg. Univ. Coll.
Liverp.
- PHILLIPS, E. V. (1881). Kibworth,
Leicester. D.P.H.
- PHILLIPS, G. C. J. (1890). 10, Long
Street, Devizes. M.A., M.D., B.C.
Cantab.
- PHILLIPS, G. G. (1858). Tickhill,
Rotherham, Yorks.
1860. 3rd Year Student, 3rd Coll. Prize.
H.S.
- PHILLIPS, H. J. (1892). Richmond
Lodge, Brunswick Hill, Reading.
H.S. A.H.S.
- PHILLIPS, J. R. P. (1885). 5, Addison
Road, North, Notting Hill.
- PHILLIPS, P. C. (1886). Vine House,
Grantham.
Clin. Asst. Skin Dept.
- PHILLIPS, S. C. (1882). 90, Hill Street,
Peckham.
- PICKFORD, J. K. (1871). High Cliff
Ter., Cleethorpes, Gt. Grimsby, Linc.
w 1872. 1st Year Student, 3rd Coll. Prize.
- PIETERSEN, J. F. G. (1879). Ashwood
House, Kingswinford, Staff.
w 1883-4. Solly Medal and Prize.
Clin. Asst. Throat Dept.
- PIGGOTT, F. C. H. (1882). 13, Orchard
Gdns., Teignmouth, S. Devon. B.A.,
M.D., B.C. Cantab.
- PIERCE, R. W. C. (1893). Trinity
Villa, Llandudno. M.B., B.Sc.
Lond.; D.P.H. Camb.
w 1893-4. 1st Year Student, 1st Entrance
Sci. Scholarship, 1st Coll. Prize.
s 1894. 1st Year Student, 2nd Coll. Prize.
w 1894-5. 2nd Year Student, 1st Coll. Prize.
w 1895-6. 3rd Year Student, 2nd Coll. Prize.
s 1896. 3rd Year Student, 2nd Coll. Prize.
H.P.
- PIKE, J. B. (1870). 15, High Street,
Loughborough.
- PILCHER, C. W. (1896). Boston, Lincs.
B.A. Oxon.
1888. The Solly Medal and Prize.
- PINTO, J. O. (1886). Maj. I.M.S.
Madras.
- PITTS, B. (1873). 109, Harley St.,
Cavendish Square. M.A., M.B.,
M.C. Cantab., F.R.C.S., Surgeon and
Lect. on Surg. St. Thos. Hosp.;
Surg. Hosp. for Children, Gt. Ormond
St. Exam. in Surgery, Univ. Camb.
Res. Asst. Surg., Demonst. of Anat.,
H.S., R.A.
- PITTS-TUCKER, F. A. (1886). St.
Ives, Huntingdonshire.
- PLANCK, C. (1888). County Asylum,
Haywards Heath. M.A. Cantab.
w 1888-9. 1st Year Student, 2nd Coll. Prize.
w 1889-90. 2nd Year Student, The Peacock
Scholarship.
s 1890. 2nd Year Student, 2nd Coll. Prize.
w 1890-1. 3rd Year Student, 2nd tenure of
Peacock Scholarship, with 3rd
Coll. Prize.
H.S., A.H.S., Clin. Asst. Ear Dept., Asst.
Demonst. of Pract. Surg.
- PLANT, C. (1882). Dalton-in-Furness,
Lanc.
- PLOWMAN, S. (1879). Victoria.
F.R.C.S.
- PLOWMAN, T. A. B. (1881). Greenway,
North Curry, Taunton.

- POCOCK, A. G. C. (1877). Manor View, High Road, Streatham. M.B., Durh.
- PODMORE, R. (1870). 7, Linden Gardens, Chiswick.
- POLLARD, F. (1864). 21, St. Nicholas Road, Upper Tooting. M.D. Lond. 1865. 1st Year Student, 2nd Coll. Prize. 1866. 2nd Year Student, 2nd Coll. Prize; Physical Society's 2nd Year's Prize. 1868 3rd Year Student, 1st Coll. Prize; Physical Society's 3rd Year's Prize; Cheselden Medal. Med. Regist., H.S., R.A.
- POMEROY, W. (1889). Queen Camel, Bath.
- POOLF, C. N. F. (1886). 16, Cicada Road, St. John's Hill, Wandsworth.
- PORTER, G. (1886). Frascati, St. James's Rd., Surbiton. M.D., C.M. Edin.
- POTTER, H. P. (1871). Med. Superint. Kensington Infirmary. M.D. Durh., F.R.C.S., D.P.H. Camb. 1872. 3rd Coll. Prize. w 1873. 2nd Year Student, 2nd Coll. Prize; Prosector's Prize. w 1874. 3rd Year Student, 1st Coll. Prize; Cheselden Medal. 1875. Grainger Testimonial Prize. Surgical Registrar, H.S., H.P., R.A.
- POTTER, J. H. (1881). Porlock, Somerset.
- POULTON, B. (1879). Adelaide, S. Australia. M.D. Ch. B. Melb.
- POWELL, C. (1895). Wolverton St. Mary, Stony Stratford. M.A., M.B., B.C. Cantab.
- POWELL, J. J. (1887). Highworth, Wilts. M.A., M.B., B.C. Cantab.
- POWELL, J. J. (1874). Norwood Lodge, Weybridge, and Byfleet, Surrey.
- POWER, C. J. (1879). Hazelwood, Nailsworth, Glouc. M.A. Cantab., M.D. Dub.
- POWERS, R. H. (1886). 2, Bigby St., Brigg, Lincolnshire.
- POYNDER, G. F. (1871). Maj. R.A.M.C.
- PRAIN, J. L. (1888). 100, Calle Alvarez, Viña del Mar, Chili. F.R.C.S. H.S., A.H.S., Clin. Asst. Throat Dept.
- PRALL, C. B. (1887). Capt. I.M.S. Bengal.
- PRANGLEY, H. J. (1875). Tudor House, Anerley.
- PRICE, A. (1869). Merriebank, Moss Lane, Aintree, Liverpool.
- PRICE, A. E. (1884). Denstone, Winchester. M.B. Lond. Clin. Asst. Ear and Skin Depts.
- PRICE, D. (1891). Greenfield, Saddleworth, Yorks.
- PRICE, W. T. (1876).
- PRIESTLEY, C. E. (1870). 1, Dorset Gardens, Brighton.
- PRING, H. R. (1888). 252, Liverpool Road, Islington.
- PRINGLE, A. Y. (1884). 64, St. Matthew's Street, Ipswich. Clin. Asst. Throat Dept.
- PRIOR, J. (1890). Wood End House, Dewsbury.
- PROCTOR, C. E. (1890). Sowerby Grange, Thirsk.
- PROCTOR, S. F. (1874). Trinidad, W. Indies.
- PRONGER, C. E. (1872). East Parade, Harrogate, Yorks. F.R.C.S.
- PUGH, J. H. (1871). c/o General Manager, Government Life Insurance, Wellington, New Zealand. B.A. Cantab.
- PURKISS, A. (1875). Alumchine Rd., West Bournemonth. M.D., C.M. Aberd.
- PURVIS, G. C. (1882). Colonial Bacteriological Institute, Grahams-town, Cape Colony. M.D., C.M. Edin., B.Sc.
- PURVIS, J. P. (1860). 38, Royal Hill, Greenwich.
- PURVIS, P. (1833). 5, Lansdowne Place, Blackheath. M.D. Lond.
- PURVIS, W. P. (1887). 2, Avenue Place, Southampton. M.D., M.S., B.Sc. Lond.; F.R.C.S. H.S., H.P., A.H.S., Clin. Asst. Throat Dept.
- PYWELL, P. D. (1893). 244, Westminster Bridge Road.
- QUAIT, A. W. (1887). St. Brannock's, Mundesley, Norfolk.
- QUILLER, C. T. (1882). St. Paul's Close, Rectory Grove, Clapham.
- RABY, J. (1862). Ashford House, Barnstaple. Maj. I.M.S. Retired. R.A.

- RADCLIFFE, H. H. (1842). Ballarat, Victoria, Australia.
- RANSON, W. (1888). Ashburton, S. Devon. F.R.C.S. Edin.
- RAY, W. J. O. (1889). Southery, Downham Market. Clin. Asst. Throat Dept.
- RAYNER, H. (1861). 16, Queen Anne Street, and Upper Terrace House, Hampstead. M.D., C.M. Aberd.; M.R.C.P. Edin.; Lect. on Psychology at St. Thomas's Hosp.
1862. 1st Year Student, 1st Coll. Prize.
1863. 2nd Year Student, 1st Coll. Prize. Lecturer on Psychology at Middlesex Hospital, and Medical Superintendent Hanwell Asylum.
- READ, A. E. (1881).
- REDDY, H. L. (1876). 999, Dorchester St., Montreal, Canada. M.D., C.M. Mc Gill.
- REDPATH, W. (1888). Geelong Mining Co., Gwanda, Rhodesia. M.B. Lond. H.S., A.H.S., Asst. Teacher Pract. Surg.
- REED, W. H. (1861). Allersleigh, Westbury, Wilts.
- REID, R. G. (1890). 176, Lambeth Road. M.B., C.M. Glasg.
- REID, R. W. 37, Albyn Place, Aberdeen. M.D., C.M. Aberd.; F.R.C.S., Prof. of Anat. Univ. Aberd. Late Joint Lect. on and Sen. Demonstr. of Anat.
Late Joint Demonstr. of Morb. Anat.
- REID, S. B. (1895). Elderslie, Oamaru, New Zealand. B.A., M.B., B.C. Cantab.
- REILLY, C. C. (1880). Maj. R.A.M.C.
- RELTON, B. (1879). 50, Church St., Rugby.
1880. 2nd Entrance Science Scholarship. H.S., A.H.S., Asst. Demonstr. of Pract. Surg.
- RENDLE, G. 113, Sunderland Road, Forest Hill. Sec. Med. Sch. (1883).
- RENNY, E. G. (1886). Priory House, Wellesley Road, Colchester.
- REVELY, J. S. (1885). Cheviot House, Tettenhall, Staffs. M.D. Durh.
- REYNOLDS, C. A. (1895). 14, The Square, Shrewsbury. M.B., B.Ch. D.P.H. Oxon.
- RICHARDS, L. W. (1891). M.B., B.S. Durh.
H.P. Clin. Asst. Throat Dept.
- RICHARDSON, C. B. (1875). 2, Tisbury Road, West Brighton. M.D., C.M. Aberd.
A H.P., A.H.S.
- RICHARDSON, J. C. R. (1887). The Beeches, Saxmundham, Suffolk. M.A., M.B., B.C. Cantab.
- RICHARDSON, S. W. F. (1889). M.B., B.Sc. Lond.; F.R.C.S. Demonstr. of Pract. Surg.
w 1889-90. 1st Year Student, The William Tite Scholarship.
s 1890. 1st Year Student, 2nd Coll. Prize.
w 1890-1. 2nd Year Student, The Musgrove Scholarship.
w 1891-2. 3rd Year Student, 2nd Tenure of Musgrove Scholarship.
s 1892. 3rd Year Student, 1st Coll. Prize.
w 1892-3. 4th Year Student, The Cheshelden Medal:
The Treasurer's Gold Medal.
H.S., A.H.S., Obst. H.P. Demonstrator of Physiology.
- RIDGE, J. J. (1863). Carlton House, Enfield, Middlesex. M.D. (State Med.), M.D., B.S. B.A., B.Sc. Lond.
1864. 1st Year Student, The William Tite Scholarship.
1865. 2nd Year of Tite Scholarship; Physical Society's 2nd Year's Prize; Prosector's Prize.
1866. The Grainger Testimonial Prize.
1868. 3rd Year Tite Scholarship;
Treasurer's Gold Medal.
H.S.
- RIDSDALE, A. E. (1888). Rottingdean, Sussex.
- RIGBY, C. S. A. (1878). 28, Winckley Sq., Preston, Lanc. M.B., C.M. Aberd.
- RIGBY, P. A. (1873). Purulia, Mau-bhum, Bengal, India.
- RITCHIE, E. D. (1883). Chandler's Ford, Hants. M.A., M.B., B.C. Cantab. H.S., A.H.S., H.P., A.H.P.
- ROALFE-COX, W. J. (1881). The Laurels, Mortimer, Reading, Berks.
- ROBATHAN, G. B. (1866). The Grove, Risca, Newport, Mon.
- ROBERTS, C. H. Durban, Natal.
- ROBERTS, E. A. (1884). 19, Cliveden Place, Eaton Square. M.D. Lond.
- ROBERTS, O. (1874). 32, Craven Park Road, Harlesden.
- ROBERTSON, C. (1883). Sterkstroom, Cape Colony. J.P.

- ROBINSON, A. C. (1892).** 60, Waterloo, Northampton.
w 1896-7. 5th Year Student, The Cheselden Medal.
H.S., A.H.S.
- ROBINSON, G. W. (1873).** Lt.-Col., R.A.M.C.
- ROBINSON, H. B. (1879).** 1, Upper Wimpole Street. M.D., M.S. Lond., F.R.C.S. Assistant Surgeon; in charge of Throat Department, and Lecturer on Anatomy at St. Thomas's Hosp. Surgeon to the East London Hospital for Children, Shadwell.
s 1891. 2nd Year Student, 1st Coll. Prize. Resident Assistant Surgeon, H.P., H.S., A.H.S.
- ROBINSON, J. C. R. (1889).** Harleston, Norfolk.
- ROBINSON, M. A. (1869).** Travelling.
- ROBINSON, S. C. B. (1874).** Maj. R.A.M.C.
- ROBINSON, W. H. (1882).** 14, Upper Queen's Terrace, Fleetwood, Lanc.
- ROBSON, C. (1882).**
- ROBSON, R. B. (1887).** 20, Bondgate Without, Alnwick, Northld. M.B. Durh.
- ROBSON, W. W. C. (1878),** Walkeringham, Gainsboro', Linc.
- ROCK, C. H. (1887).** Surg. R.N. 65, Granville Park, Lewisham.
- ROCKLIFFE, W. C. (1871).** 17, Charlotte Street, Hull. M.A., M.B. Cantab.; M.D. Dub. Hon. Oph. Surg. Hull Royal Inf. and Blind Instn.
- ROE, A. D. (1880).** 47, West Hill, Wandsworth. B.A., M.B. Cantab.
w 1880-1. 3rd Year Student, 2nd Coll. Prize.
- ROE, E. A. H. (1889).** Lt.-Col. R.A.M.C. (retired).
- ROLL, G. W. (1884).** 6, Gloucester Rd., South Kensington. B.A., M.B., B.C. Cantab. F.R.C.S. Ophth. H.S.
- ROLPH, J. WIDNER (1866).** Kuantau, via Singapore, Strait Settlements.
- ROMER, H. (1884).** 68, Killieser Avenue, Streatham Hill. M.A., M.B., B.Ch. Oxon.
- RONALD, A. E. (1886).** Shakespeare Road, Napier, Hawkes Bay, New Zealand. B.A., M.B., B.C. Cantab.
- ROPER, H. (1890).** Lynton, North Devon. B.A., M.B., B.C. Cantab.
- RORIE, J. (1846).** Dep. - Insp. - Gen. R.N. (retired).
- ROSS, E. H. (1892).** H.P., A.H.P.
- ROSS, H. C. (1892).** Lond. Co. Asylum, Cane Hill, Purley.
- ROSSER, W. (1865).** Glenalmond, Wellesley Road, Croydon, Surrey. M.I. Aberd. H.S.
- ROSSITER, G. F. (1870).** Cairo Lodge, Weston-super-Mare. M.B. Lond. 1871. 1st Year Student, 1st Coll. Prize.
w 1872. 2nd Year Student, 2nd Coll. Prize.
s 1872. 1st Coll. Prize.
w 1873. 3rd Year Student, 3rd Coll. Prize: Cheselden Medal; Treasurer's Gold Medal.
H.P., H.S., R.A.
- ROSTANT, A. A. (1887).** 85, Northumberland Park, Tottenham.
- ROTH, W. E. (1884).** Normanton, North Queensland.
- ROTHERHAM, A. (1892).** Lond. Co. Asyl., Epsom, Surrey. M.A., M.B., B.C. Cantab.
- ROUILLARD, J. A. A. (1891).** Lady-smith, Natal.
Clin. Asst. Throat Dept.
- ROUILLARD, L. A. J. (1886).** Durban, Natal. M.B. Camb.; F.R.C.S. H.S., A.H.S.
- ROUND, J. C. (1884).** Purbrook, 19, Crescent Wood Road, Sydenham Hill. L.D.S.
- ROUSE, R. E. (1878).** Royal Societies Club, St. James' Street (summer); and Winter Palace, Monte Carlo (winter). M.D. Lond.
s 1880. 2nd Year Student, 3rd Coll. Prize.
H.P., R.A.
- ROWE, W. J. V. (1875).**
- RUDALL, J. F. (1890).** 121, Collins Street East, Melbourne, Australia. M.B., B.S. Melb. Ophth. H.S.
- RUDALL, J. T. (1851).** 61, Spring Street, Melbourne, Victoria, Australia. F.R.C.S.
- RUGG, J. F. (1873).** 25, High St., Hastings.
- RUSSELL, A. E. (1889).** St. Thomas's Hospital. M.D., B.S. Lond., M.R.C.P.; Resident Assist. Physician.
w 1889-90. 1st Year Student, 2nd Entrance Science Scholarship: 1st Coll. Prize.
s 1890. 1st Year Student, 1st Coll. Prize.
w 1890-1. 2nd Year Student, Half 1st and 2nd Coll. Prizes.
w 1891-2. 3rd Year Student, 1st. Coll. Prize.
H.P., H.S., A.H.S., Clin. Asst. Skin Dept. Demonstrator of Physiology, Med. Registrar and Dem. of Pract. Med.
- RUSSELL, J. (1890).** Brunswick St., Batley, Yorks. M.A. Aberd., M.D., C.M. Edin.

- RUSSELL, J. S. R. (1886). 4, Queen Anne St., Cavendish Square. M.D. C.M.Edin.; F.R.C.P. Lond.
- RUTHERFOORD, H. T. (1886). Salisbury House, Taunton. M.A., M.D. Cantab.
- RYGATE, R. (1877). Wardington, Banbury, Oxon.
- SALISBURY, C. R. (1887). Alverston House, 183, Evering Road, Stoke Newington.
- SALWAY, C. B. (1891).
- SAMS, J. S. (1854). St. Helen's, Isle of Wight.
- SANDERSON, A. R. P. (1891). Eureka City, Barberton, Transvaal.
- SANDWITH, F. M. (1872). Cairo, Egypt, and Savile Club, London. M.D. Durh.; F.R.C.P. Lond.; Phys. and Teacher of Clin. Med. Kasr el Aini Hosp., Cairo; Exam. in Med. and Path. at Med. Sch. H.P., R.A.
- SANEYOSHI, Y. (1879). Tokio, Japan. F.R.C.S.
w 1881-2. 3rd Year Student, 1st Coll. Prize. H.P., A.H.P., A.H.S.
- SANGUINETTI, H. H. (1895). 34, St. John's Wood Road. B.A., M.B., B.Ch., Oxon. H.S., A.H.S.
- SANKEY, E. H. O. (1891). Boreatton Park, Baschurch, Salop. M.A., M.B., B.C. Cantab.
- SANSOM, H. A. (1882). The Glen, 127, West End Lane, West Hampstead. M.D. Lond. A.H.P., Clin. Asst. Throat and Skin Depts.
- SAPARA, O. (1887). Lagos, W. Africa.
- SARGENT, P. W. G. (1895). 80, Pembroke Road, Clifton, Bristol. M.A., M.B., B.C. Cantab.
w 1895 6. 3rd Year Student. University Scholarship. H.S., A.H.S., Clin. Assist. Skin Dept.
- SARKIES, S. C. (1877). Lt.-Col. I.M.S. Madras.
- SAUNDERS, C. E. (1861). Med. Superint. Sussex Co. Asyl., Hayward's Heath. M.D., C.M. Aberd.; M.R.C.P., D.P.H. Camb. Surg. Regist., R.A.
- SAUNDERS, E. A. (1889). 49, Harley Street. M.A., M.B., B.Ch. Oxon. D.P.H. Oxon., M.R.C.P. Asst. Physn. W. Lond. Hosp.
w 1892-3. 4th Year Student, The Mead Medal. H.P. Obst. H.P. Ophth. H.S.
- SAUNDERS, Sir Edwin. (1836). Fairlawn, Wimbledon Common (retired). F.R.C.S., Surg.-Dent. to H.M. the Queen and T.R.H. the Prince and Princess of Wales, also to his late R.H. Prince Consort.
Lect. on Anat. and Dis. of the Teeth
- SAUNDERS, F. E. (1886). 154, High Street, Battersea.
- SAUNDERS, H. (1882). The Priory, Deddington, Oxon. B.A. Cantab.
- SAUNDERS, H. W. (1866). M.B. Lond., F.R.C.S. Amroth, Woburn Hill, Addlestone, Surrey.
1867. 1st Year Student, 2nd Coll. Prize.
1868. Prosector's Prize.
1869. 3rd Year Student, 1st Coll. Prize; Treasurer's Gold Medal; Physical Society's 3rd Year's Prize.
- SAUNDERS, W. S. (1843). 13, Queen Street, Cheapside, and 58, Onslow Gdns., South Kensington. M.D. Castleton U.S.
1845. Medicine, Prize;
Midwifery, Prize;
Clinical Medicine, Prize.
- SAVILL, T. D. (1875). 60, Upper Berkeley St., Portman Sq. M.D. Lond., D.P.H. Cantab. M.R.C.P.
w 1875-6. 2nd Entrance Science Scholarship; 1st Year Student, The William Tite Scholarship.
s 1876. 3rd Coll. Prize.
s 1877. 2nd Year Student, 2nd Coll. Prize. H.P., A.H.P., R.A.
- SAYRES, A. W. F. (1885). Woodford, Essex. M.D. Brux.
Clin. Asst. Ear. Dept.
- SAYERS, M. J. H. (1889). 6, Waterloo Place, Brighton.
- SCAPING, H. M. (1895). B.A. Cantab. Jun. Obst. H.P. Clin. Assist. Skin Depart.
- SCATCHARD, J. P. (1892). Tadcaster, York. M.B., B.S. Lond.
w 1892-3. 1st Year Student, 1st Coll. Prize.
s 1893. 1st Year Student, 2nd Coll. Prize.
w 1893-4. 2nd Year Student, 1st Coll. Prize.
w 1895-6. 4th Year Student, The Cheshelden Medal, Treasurer's Gold Medal. H.P. Junr. Obst. H.P.
- SCHILLING, G. (1885). 58, Crystal Palace Park Road, Sydenham.
- SCOTT, E. (1870). M.D. Durh. D.P.H. Camb.
- SCOTT, E. H. (1892). 3, Cambridge Mansions, Clapham Common.
- SCOTT, H. H. (1893). Breaston, Derby. M.B. Lond.
H.P.
- SCOTT, J. R. (1885). Market Overton, Oakham, Rutland.

- SCOTT, J. W.** (1875). 11, St. George's Parade, Wolverhampton.
- SCUDAMORE, L.** (1886). 23, Granville Park, Blackheath. Clin. Asst. Skin Dept.
- SCUTT, T. H.** (1879). Colne Lodge, Staines, Middlesex. w 1882-3. 3rd Year Student, 1st Coll. Prize. A.H.P.
- SEAR, J. T.** (1888). 29, Tooting Bec Road, Upper Tooting.
- SEATON, E. C.** (1865). The Limes, 56, North Side, Clapham Common. M.D., F.R.C.P. Lect. on Pub. Health St. Thos. Hosp.; Late Exam. in Pub. Health and State Med. R.C.S. Eng. and Univ. Lond.
- SECCOMBE, P. J. A.** (1890). Kings-thorpe, Church Road, Forest Hill. M.A., M.B., B.C. Cantab. H.P. Clin. Asst. Throat and Electr. Depts.
- SEDDON, H. B.** (1883) 1, Victoria Place, Newport, Mon. A.H.P., Clin. Asst. Throat and Ear Dept.
- SEDWICK, H. R.** (1892). Onslow Villa, Richmond Road, Kingston-on-Thames. M.A., M.B., B.C. Cantab. Clin. Asst. Skin Dept.
- SEDWICK, J.** (1853). The Firs, Copse Hill, Wimbledon. M.D. St. And. J.P.
- SEDWICK, L. W.** (1847). 48, Gloucester Terrace, Hyde Park. M.D., St. And.
- w 1848. Descriptive and Surgical Anatomy, Prize; Physiology and Anatomy, Prize; Midwifery, Prize; Surgery, Prize.
- w 1849. Physiology, 1st Prize; Midwifery, 1st Prize; Surgery, Prize; Medicine, 1st Prize; General Proficiency, Treasurer's Medal.
- SELIGMANN, C. G.** (1892). Salters' Company, Research Fellow, 1899. w 1892-3. 1st Year Student, 2nd Entrance Science Scholarship; Half 2nd Coll. Prize. w 1896-7. The Bristow Medal. H.P. Clin. Asst. Electrical Dept.
- SELOUS, C. F.** (1895).
- w. 1895-6. 1st Year Student, The William Tite Scholarship.
- w. 1896-7. 2nd Year Student, Musgrove Scholarship.
- SEMON, Sir F.** 39, Wimpole Street, Cavendish Square. M.D. Berlin; F.R.C.P. Lond. Late Phys. for Dis. of Throat St. Thos. Hosp.
- SENIOR, E. W.** (1886). Hamilton Villa, Herne Bay.
- SEON, G. E.** (1877). Dellwood, Lieben-wood Road, Reading.
- SERGEANT, E.** (1867). County Offices, Preston, Lanc. L.S.Sc. Durh. 1870. 3rd Year Student, 3rd Coll. Prize; Cheselden Medal. H.S., R.A.
- SERS, C. H.** (1868). 130, Queen's Rd., Peckham.
- SHACKEL, G. A.** (1880). Brand House, Ludlow, Salop.
- SHARKEY, S. J.** (1873). 22, Harley Street, Cavendish Square. M.A., M.D. Oxon.; F.R.C.P.; Gulst. Lect. 1886. Phys., Jt. Lect. on Med. St. Thos. Hosp.; Late Exam. in Path. Univ. Oxf. Exam. in Medl. Anat. and Principles and Pract. of Med. R.C.P. Lond.
- Lect. on Pathology, Demonstrator of Morbid Anatomy, and Res. Asst. Phys.; Radcliffe Travelling Fellow, Univ. Oxf.
- SHARMAN, M.** (1885). Rickmans-worth, Herts. M.B., C.M. Glasg. D.P.H. Edin. and Glas.
- SHARPLES, M. W.** (1896). 9, London Road, Frest Hill. M.B., C.M. Aberd.
- SHATTOCK, S. G.** 4, Crescent Road, Wimbledon. F.R.C.S. Curator of Museum and Jt. Lect. on Pathology. Path. Curator, Royal Coll. Surg.
- SHAW, A. E.** (1885). 337, New North Road.
- SHAW, J.** (1874). 32, New Cavendish St., Cavendish Square. M.D. Lond. M.R.C.P.
- w 1874-5. 1st Year Student, 1st Coll. Prize. s 1875. 1st Coll. Prize.
- w 1875-6. 2nd Year Student, 1st Coll. Prize. H.P., A.H.P., R.A.
- SHAW, J. C.** (1897). City Asylum, Willerby, nr. Hull, Yorks.
- SHAW, W. H. C.** (1885). The Grange, Chew Magna, Somerset. M.A., M.B., B.C. Cantab.
- SHEA, H. F.** (1892). 50, Goldhurst Terrace, S. Hampstead. M.B., B.S. Durh. H.P., Sen. Obst. H.P.
- SHEARER, D. F.** (1886). Eversfield House, Warminster, Wilts. B.A., M.B., B.Ch. Oxon.; F.R.C.S. 1888. 2nd Year Student, Half 2nd Coll. Prize. H.P., H.S., A.H.S., Clin. Asst. Throat Dept.
- SHEPHEARD, H.** (1887). 37, Southwick Street, Hyde Park.

- SHEPHEARD, J. (1887). Cromer Rd., North Walsham, Norfolk. B.A. Cantab.
- SHEPHEARD, P. C. (1859). Aylsham, Norfolk.
- SHEPHERD, H. B. (1882). Peveril House, Cawston, Sheffield.
- SHEPHERD, F. J. (1873). 152, Mansfield St., Montreal. M.D. McGill; Professor of Anatomy, McGill University; Senior Surgeon Montreal General Hospital.
- SHEPHERD, T. W. (1873). Castle St. House, Launceston, Cornwall.
- SHEPPARD, W. J. (1878). 211, Upper Richmond Road, Putney. M.D., M.S. Durh.
w 1880-1. 3rd Year Student, 3rd Coll. Prize.
w 1881-2. The Treasurer's Gold Medal.
R.A., H.P., A.H.P., A.H.S.
- SHERRINGTON, C. S. (1876). M.A., M.D., F.R.S. Prof. of Physiology, University College, Liverpool. Fellow of Gonville and Caius College, Cambridge. Physiological Society Hon. Sec.
w 1882-3. 6th Year, Grainger Testimonial Prize.
Lecturer on Physiology.
- SHIRRES, G. (1880). Ocean Grove, Victoria, Australia. M.D., C.M., D.P.H. Aberd.
- SHIRLIFF, E. D. (1882). 23, Carisbrook Road, St. Leonards-on-Sea.
w 1882-3. 2nd Entrance Science Scholarship.
- SIDDALL, G. O. (1853). Late R.N.
- SIDDALL, J. B. (1860). Conybeare, Northam, Bideford. M.D., C.M. Aberd., D.P.H. Camb. H.S.
- SIKES, A. W. (1892). St. Thomas's Hosp. M.D., B.S., B.Sc. M.R.C.P. Lond. F.R.C.S. Medical Registrar, and Dem. of Pract. Med.
w 1892-3. 1st Year Student, 1st Entrance Science Scholarship, the Wm. Tite Scholarship.
s 1893. 1st Year Student. 1st. Coll. Prize.
w 1893-4. 2nd Year Student, the Peacock Scholarship.
w 1894-5. 3rd Year Student, 1st Coll. Prize, with 2nd tenure of Peacock Scholarship.
s 1895. 3rd Year Student, 1st Coll. Prize.
w 1895-6. 4th Year Student, the Mead Medal.
w 1896-7. 5th Year Student, the Treasurer's Gold Medal.
w 1897-8. The Bristow Medal.
H.P. Demonstrator of Physiology.
- SIMMONDS, E. L. (1856). St. Kilda, Victoria, Australia.
- SIMMONDS, H. M. (1847). 66, Camberwell Road.
- SIMON, Sir John, K.C.B. (1833). 40, Kensington Sq. F.R.C.S. (Hon.), F.R.S., Hon. M.D. et Chir. Munich, Hon. M.D. Dub., Hon. D.C.L. Oxon, Hon. LL.D. Cantab. et Edin. Cons. Surg. (formerly Surg. and Lect. on Path.) St. Thos. Hosp.
- SIMON, M. F. (1865). Singapore, Straits Settlements. M.D. St. And.; L.D.S. Edin.
1866. 1st Year Student, 1st Coll. Prize.
1869. 3rd Year Student, 3rd Coll. Prize;
Prosector's Prize;
Prize and Hon. Cert. for Surgery
and Surgical Anatomy.
- SIMPSON, C. B. (1889). Highfield, Budleigh Salterton, Devon.
- SIMPSON, H. (1889). Market Weighton, East Yorks. B.A., M.B., B.C. Cantab.
w 1889-90. 3rd Year Student, 3rd Coll. Prize.
A.H.S., Clin. Asst. Ear Dept.
- SIMS, D. (1888). 260, Meanwood Road, Leeds.
- SIMS, G. S. (1880). The Hollies, Green Hill, Derby.
s 1881. 1st Year Student, 3rd Coll. Prize.
- SINCLAIR, D. (1887). 6, East Park Terrace, Maryhill, Glasgow. M.B., C.M. Glasgow.
- SINGER, H. D. (1893). St. Thomas's Hospital. M.B. Lond., Assist. to the Supt. of the Clin. Laby.
w 1893-4. 1st Year Student, 2nd Coll. Prize.
w 1894-5. 2nd Year Student, 2nd Coll. Prize.
w 1898-9. The Bristow Medal.
H.P.
- SINGH, B. J. (1888). Capt. I.M.S. Bengal.
- SISSEY, W. H. (1857). 3, Priestgate, Barton-on-Humber, Linc. J.P.
1858. Matriculation Examination—Physics, &c., Prize.
1859. Clinical Medicine, Prize;
Physical Society's Essay, Prize.
1860. 3rd Year Student, 2nd Coll. Prize;
Physical Society's Prize.
H.S.
- SKARDON, T. G. (1854). Brig.-Surg. I.M.S., Bengal. (Retired).
- SLATER, J. S. (1867). Evesham, Worc. J.P.
1868. 1st Year Student, 1st Coll. Prize.
1869. Physical Society's 2nd Year's Prize.
1870. 3rd Year Student, 2nd Coll. Prize;
Treasurer's Gold Medal.
H.P., R.A.
- SLAUGHTER, C. H. (1853). Insp.-Gen. R.N. (retired).

- SLAUGHTER, W. B. (1866). Lt.-Col. R.A.M.C.
- SLOCOCK, R. (1889). Spilsby, Lincs.
- SMART, W. H. (1882). Polesworth, Tamworth, Warwk. M.A., M.B. Cantab.
- SMITH, A. (1878). Bank House, 54, Stockwell Green.
- SMITH, C. C. (1873). Redditch, Worcester. B.A., M.B. Cantab. H.S., R.A.
- SMITH, C. J. (1856). 2, Medina Villas, Brighton.
- SMITH, E. (1888). Wallace Lodge, Balham High Road, Upper Tooting. M.D. Lond.
w 1888-9. 1st Year Student, 2nd Entrance Science Scholarship; The William Tite Scholarship.
s 1889. 1st Year Student, 1st Coll. Prize.
w 1889-90. 2nd Year Student, 1st Coll. Prize.
w 1890-1. 3rd Year Student, 2nd Coll. Prize.
s 1891. 3rd Year Student, 2nd Coll. Prize; Treasurer's Gold Medal.
H.S., A.H.S.
- SMITH, E. L. T. (1873). Seaford House, 1, Upper Richmond Road, Putney. B.A., M.B., Camb.
- SMITH, F. J. P. (1881). 103, East St., Walworth.
- SMITH, F. W. (1863). 40, Newington Causeway.
- SMITH, H. (1851). Ormonde House, Ryde, I.W. (retired).
- SMITH, H. (1857). Blackrod, Chorley, Lanc.
- SMITH, H. E. (1887). Gleneagle House, Streatham. M.A., M.B., B.C. Cantab.
- SMITH, J. 23, Park Road, Plumstead, Kent.
- SMITH, J. (1892). 18, Putney Hill, M.A., M.B., B.C. Cantab.; F.R.C.S. H.S., A.H.S.
- SMITH, J. B. (1881). 4, Holmdene Avenue, Half Moon Lane, Dulwich.
- SMITH, J. H. (1891). 1, Cambridge Rd., Downs Hall, Ilford.
- SMITH, R. P. (1874). 36, Queen Anne St. M.D., B.S., F.R.C.P. Lond. Lect. on Psychological Med. Char. Cross Hosp.
s 1876. 2nd Year Student, 2nd Coll. Prize. Res. Asst. Phys., H.P., A.H.P., H.S. A.H.S., Demost. of Pract. Phys.
- SMITH, S. L. (1870). 25, Argyle Square, King's Cross.
- SMITH, W. H. (1854). Cranmore, Royal St. West, Sandown, I. W.
- SMITH, W. H. (1877).
- SMYTH, H. J. (1882). South Molton, N. Devon.
w 1882-3. 1st Year Student, 3rd Coll. Prize.
s 1883. 1st Year Student, 1st Coll. Prize.
w 1883-4. 2nd Year Student, 1st Coll. Prize.
s 1884. 2nd Year Student, 2nd Coll. Prize.
w 1885-6. 4th Year Student, Treasurer's Gold Medal.
H.P., R.A., Clin. Asst. Skin Dept.
- SNAITH, F. (1861). 5, Pump Square, Boston, Linc. M.D., C.M. Aberd.
- SNOAD, E. H. (1849). Aylestone Park, Leicester.
- SOFTLY, A. E. (1894). Dover Hosp.
- SOLLY, E. (1882). Strathlea, Coldbath Road, Harrogate. M.B. Lond.; F.R.C.S.; D.P.H.
w 1883-4. 2nd Year Student, 2nd Coll. Prize.
w 1885-6. Solly Medal and Prize. Surg. Registr., A.H.S., R. A., Clin. Asst., Skin and Ear Depts.
- SOLLY, R. V. (1883). 40, West Southernhay, Exeter. M.D., B.S. Lond.; F.R.C.S.
w 1884-5. 2nd Year Student, Half 2nd Coll. Prize.
H.S., A.H.S., Clin. Asst. Skin Dept.
- SOLLY, S. E. (1863). Colorado Springs, Colorado, U.S.A. M.D. Denver. Med. Registr.
- SOMERS, C. D. (1893). Deodara, Portsmouth Rd., Surbiton. B.A., M.B., B.C. Cantab.
- SOUTH, R. E. E. (1882). Church Close, Boston, Linc. J.P.
- SOUTHERN, F. G. (1881). Pant-yr-odin, Llandebie, S. Wales.
- SOUTHERN, J. A. (1878). Friar Gate, Derby.
- SOWERBY, T. (1848). Welshpool, Montgomery.
- SPARKE, G. W. (1850). Mansfield, Notts.
- SPAULL, P. W. (1888). 1, Stanwick Road, West Kensington.
- SPEED, H. A. (1871). 26, East Road, City Road.
- SPENCER, M. H. (1885). 95, St. Mark's Road, North Kensington. M.A., M.D., B.C. Cantab.
H.P., Ophth. Asst.
- SPITTA, E. J. Ivy House, Clapham Common.
- SRAKELING, R. J. (1854). 58, Merton Rd., Bootle, Liverpool. J.P.
1856. Clin. Med. Prize.
- SQUANCE, T. C. (1880). 15, Grange Crescent, Sunderland. M.D., M.S. Durh.; L.S.Sc. Phys. and Path. Sunderland Infirm.

- STABBE, A. F. (1885). 109, Harley St. M.B., B.C. Cantab. M.R.C.P. Lond. Asst. Obst. Phys. St. George's Hospital; Univ. Lect. on Midwifery, Cambridge.
w 1885-6. 1st Year Student, 1st Entrance Science Scholarship;
The William Tite Scholarship.
s 1886. 1st Year Student, 2nd Coll. Prize.
w 1886-7. 2nd Year Student, The Musgrave Scholarship.
s 1887. 2nd Year Student, 1st Coll. Prize.
w 1887-8. 3rd Year Student, 2nd Tenure of Musgrave Scholarship, with 1st Coll. Prize.
w 1888-9. Treasurer's Gold Medal.
Obst. Tutor and Registrar. H.S., A.H.S.
- STABB, E. C. (1882). 57, Queen Anne Street. F.R.C.S. Asst. Surg. Gt. Northern Hospital.
w 1883-4. 2nd Year Student, Prosector's Prize.
s 1884. 2nd Year Student, 1st Coll. Prize. Resident Assistant Surgeon, Surg. Regist., Demonstr. of Pract. Surg., Chief Asst. Throat Dept., Jun. Dem. of Anatomy. H.S., A.H.S., R.A., Clin. Asst. Throat and Ear Depts.
- STABB, F. A. (1885). St. John's, Newfoundland.
- STABB, W. W. (1888). Harleston, Torquay. B.A., M.D., B.C. Cantab.
w 1889-90. 4th Year Student, The Mead Medal.
H.P.
- STABLEFORD, F. B. G. (1893). Tau Glas, Whitchurch, Glamorganshire.
- STACY, J. H. (1883). 38, St. Giles Street, Norwich.
- STADDON, H. E. (1887). Capt. R.A.M.C.
- STADDON, J. R. (1880). 6, Silent St., Ipswich.
A.H.P.
- STADDON, W. J. (1881). The Priory, St. Nicholas, Ipswich.
- STAINER, E. (1893). 60, Wimpole Street. M.A., M.B., B.Ch. Oxon. M.R.C.P.
H.P. Clin. Asst. Skin and Elect. Depts.
- STALLARD, H. (1889). Stow-on-the-Wold, Gloucester. B.A. Cantab.
- STANIFORTH, J. W. (1887). The Anchorage, Hinderwell, Yorks.
- STARES, C. L. B. (1888). Wandsworth Union Infy., St. John's Hill.
- STARK, M. D. (1875). 6, Broad St., Oxford. M.D., C.M. Trin. Coll. Toronto.
- STARTIN, J. (1870). 15, Harley St., Cavendish Square.

- STATHAM, R. W. (1878). The Hall, Cheddar, Somerset.
- STAVELEY, W. H. C. (1881). 13, South Eaton Place. F.R.C.S.
H.S., A.H.S., A.H.P., Clin. Asst. Ear Dept.
- STEDMAN, S. B. (1889). Market Rasen, Lincs.
- STEEVES, G. W. (1880). 63, Parkfield Rd., Princes Pk., Liverpool.
B.A. New Brunswick, M.D. Brux.
- STEPHENS, H. Z. (1894). General Infirmary, Macclesfield, Cheshire.
- STEPHENS, W. J. (1886). Cross Tree House, Moreton Hampstead, Devon.
- STEVENS, A. E. (1892). M.B. Durh. H.P., Clin. Assist. Skin Dept.
- STEVENS, B. C. (1893). M.B., B.S. Durh.
- STEVENSON, E. S. (1871). Strathallan House, Rondebosch, Cape Colony. M.D. Brux.; F.R.C.S. Edin.
- STEVENSON, R. A. (1893). St. George's Union Infirmary, Fulham Road.
- STEWART, C. Royal College of Surgeons, Lincoln's Inn Fields. Prof. of Comp. Anat. and Phys., and Conserv. of Museum R.C.S. Eng. F.R.S., LL.D.
Curator of Museum and Lecturer on Physiology and Comparative Anatomy.
- STEWART, G. I. T. (1897). Banchory Devenick nr. Aberdeen. M.A., B.Sc., M.B., C.M. Aberd.
Clin. Asst. Ear Dept.
- STEWART, C. H. (1888). Witheridge, North Devon.
- STILES, H. T. (1851). Spalding, Linc. M.D. St. And.; J.P.
- STILWELL, G. R. F. (1886). 14, Southend Rd., Beckenham, Kent. M.B. Lond.
H.P.
- STOCKS, F. (1863). 421, Wandsworth Road.
R.A.
- STOKER, G. (1880). 14, Hertford St., Mayfair, and Dunloe Castle, Killarney, Co. Kerry. M.R.C.P.I., J.P.
- STOKES, W. (1856). Buckingham House, 51, Foster Hill Road, Bedford (retired).
- STOKES, W. (1888). Pilgrims' Rest. Lydenburg, Transvaal. M.B. Lond.

- STONE, F. W. S. (1878).
H.P.
- STONE, W. G. (1889). 93, Denmark Hill.
M.A., M.B., B.Ch. Oxon, F.R.C.S.
H.S., A.H.S. Clin. Asst. Ear and Elect.
Depts.
- STORRAR, R. L. (1888). The Mount,
Wolstanton, Stoke-on-Trent.
- STRANGE, R. G. (1890). 2, Belsize
Avenue, Hampstead. M.B., B.S.,
Lond.
H.S., A.H.S. Clin. Asst. Ear Dept.
- STRANGE, W. H. (1861). 2, Belsize
Av., Hampstead. M.D., C.M. Aberd.
- STRIDE, J. (1861).
- STRONG, G. Ross, Herefordsh. M.D.
Edin., J.P.
- STUART, T. E. (1882). 6, Orwell
Terr., Dovercourt, Essex.
- STUART-LOW, W. (1887). 50, Herne
Hill. F.R.C.S.
- STURDEE, F. H. (1891). 50, Wray
Crescent, Tollington Pk.
- SUGDEN, E. S. (1880). 77, Walton Vale,
Aintree, Liverpool. M.D. Durh.
- SULLIVAN, E. H. C. (1880). 46, David
Place, St. Helier, Jersey.
- SUMMERHAYES, H. (1860). B.A. Lond.
1861. Matriculation Examination—Classics
and Mathematics, President's Prize;
Modern Languages, &c., Coll. Prize;
Physics and Natural History, Coll.
Prize;
The William Tite Scholarship.
1862. 2nd Year Tite's Scholarship.
1863. 3rd Year Tite's Scholarship;
Treasurer's Gold Medal.
H.S., R.A., Surg. Registrar.
- SUMMERHAYES, W. (1855). 127, In-
verness Ter., Hyde Pk. M.D. Durh.
1856. Matriculation Examination—Modern
Languages, Prize.
- SUTCLIFF, E. H. (1891). Gt. Torring-
ton, Devon. M.B. Durh.
- SUTCLIFF, J. H. (1851). Farfield
House, Ripley, Surrey (retired).
- SUTCLIFFE, J. (1867). Ashbourne
House, 625, Wandsworth Rd.
1869. Prosector's Prize.
- SUTCLIFFE, P. T. (1896). Surg.
R.N. B.A., M.B., B.C., Cantab.
- SUTCLIFFE, W. G. (1888). Hampden
House, 50, Clifton Terrace, Clifton-
ville, Margate. F.R.C.S.
w 1888-9. 1st Year Student, 1st Coll. Prize.
s 1889. 1st Year Student, 2nd Coll. Prize.
w 1889-90. 2nd Year Student, 2nd Coll.
Prize.
w 1891-2. 4th Year Student, The Cheselden
Medal.
H.S., A.H.S.
- SUTTER, R. R. (1892). Poplar and
Stepney Sick Asylum, Bromley.
M.D., C.M. Aberd.
- SUTTON, Rev. F. W. (1875). M.D.
Durh.
- SUTTON, H. M. (1878). Bagdad,
Turkey-in-Asia.
- SUTTON, S. W. (1875). M.D., B.S.
Lond.
H.P., A.H.S., A.H.P., R.A. Ophth. H.S.
- SUZUKI, S. (1886). Tokio, Japan.
- SWALE, H. (1875). Meadowside,
Blyton House, Weybridge. M.B.
Lond.
A.H.P., A.H.S.
- SWALLOW, A. J. (1885). 5, Mount
Edgecumbe Gdns., Clapham Rise.
M.B., B.S. Durh.
Clin. Asst. Skin Dept.
- SWALLOW, J. D. (1859). Clifton
Lodge, Clarence Rd., Clapham Park.
M.D. St. And.
- SWEET, J. L. (1838). Tenbury, Worc.
- SWEETAPPLE, H. A. (1888). Parkside,
Adelaide, S. Australia. M.D., B.S.
Durh.
- SWINDELLS, E. (1886). Torcross,
Kingsbridge, S. Devon.
- SWINHOE, A. C. (1890). Park House,
New Swindon, Wilts.
- SWINHOE, G. R. (1887). New Swindon,
Wilts.
- SYMONS, R. FOX (1888). Trevathan,
Christchurch Road, Streatham
H.S., A.H.S.
- TAKAKI, K. (1875). Tokio, Japan.
F.R.C.S., Director-General of the
Medical Department Imperial Japanese
Navy, Surgeon to the Tokio
General Hospital.
w 1875-6. 1st Year Student, 3rd Coll. Prize.
s 1876. 1st Year Student, 2nd Coll. Prize.
w 1876-7. 2nd Year Student, 1st Coll. Prize.
s 1877. 2nd Year Student, 3rd Coll. Prize.
w 1877-8. 3rd Year Student, 2nd Coll. Prize.
w 1878-9. 4th Year Student;
The Cheselden Medal;
The Treasurer's Gold Medal.
H.S., R.A., A.H.P.
- TAKAKI, Y. (1894).
A.H.S. Clin. Asst. Skin and Ear Depts.
- TAKAYASU, M. (1890). Shichome,
Osaka, Japan. M.D. Breslau.
w 1892-3. 2nd Year Student, The Musgrave
Scholarship.
s 1893. 2nd Year Student, half 1st and 2nd
Coll. Prizes.
w 1893-4 3rd Year Student, 2nd tenure of
Musgrave Scholarship.

- TANNER, H. (1895). Hartington House, Devonshire Road, South Lambeth. F.R.C.S.
- TARZEWELL, J. (1843). Sturminster Newton, Blandford, Dorset. (retired).
- TATE, W. W. H. 57, Queen Anne St., Cavendish Square. M.D. Lond., M.R.C.P. Asst. Obst. Phys. Lect. on Midwifery, St. Thomas's Hosp. Obst. Tutor and Registrar St. Thos. Hosp.
- TATHAM, E. (1873). 51, Cambridge Road, Hammersmith.
- TAYLOR, D. (1878). Hailakandi, Cachar, Bengal. M.D., R.U.I.
- TAYLOR, F. P. (1865). Charlottetown, Prince Edward Island, Canada.
- TAYLOR, G. E. O. (1891). Bayside, Durban, Natal.
H.S., A.H.S., Clin. Asst. Skin Dept.
- TAYLOR, S. (1869). 16, Seymour St., Portman Square. M.D., C.M. Aberd., F.R.C.P. Assistant Physician West London Hospital.
Demonstrator of Anatomy.
- TAYLOR, S. J. (1874). 44, Prince of Wales Road, Norwich. M.B., C.M. Edin.
w 1875-6. 2nd Year Student, The Musgrove Scholarship.
w 1876-7. 3rd Year Student, 2nd tenure Musgrove Scholarship, and 1st Coll. Prize.
w 1877-8. The Mead Medal;
The Treasurer's Gold Medal.
- TAYLOR, T. S. (1897). B.A., M.B., B.C. Cantab.
w 1899-00. 5th Year Student, Midwifery Prize.
- TEALE, M. A. (1889). 38, Cookridge Street, Leeds. M.A. Oxon.
1894. Solly Medal and Prize.
- TEBB, W. S. (1883). 21, Beverley Rd., Anerley. M.A., M.D. Cantab., D.P.H. Clin. Asst. Throat Dept.
- TEBBS, L. V. (1887).
- TERRY, J. (1884). The Hall, Daventry, Northants.
- THOMAS, D. E. (1873). Eastfields, Chepstow Road, Newport, Mon.
- THOMAS, J. T. (1882). Penvean, Camborne, Cornwall.
- THOMAS, J. W. (1876). The Wern, Neath, Glamorg.
- THOMAS, P. C. (1884). Cape Town.
- THOMAS, R. W. (1867). Temple House, Rye Lane, Peckham.
- THOMPSON, C. H. (1879). 17, New Cavendish Street. M.A., M.D. Dub., M.R.C.P., D.P.H.
- THOMPSON, F. H. (1868). Kirkbride, Cumberland.
1870. Prosector's Prize.
- THOMPSON, G. W. (1890). 6, West Street, Scarborough. B.A., M.D., B.C. Cantab.
H.P., H.S.
- THOMSON, G. J. C. (1873). 111, Sinclair Road, West Kensington Park. M.D. Durh.
- THORMAN, W. H. (1891). Royal United Hosp., Bath. B.A. Cantab. Clin. Asst. Skin Dept.
- THORNELY, W. (1891). 60, Herne Hill. M.A., M.B., B.C. Cantab.
Clin. Asst. Throat and Elect. Depts.
- THORNTON, A. C. (1885). 11, Argyle Road, Castle Hill, Ealing.
- THORNTON, F. B. (1891). Grove Ter., Osmaston Road, Derby. M.B., B.S. Lond.
w 1894-5. 4th Year Student, The Mead Medal.
H.P.
- THORP, A. E. (1889). Lt. R.A.M.C.
- THORP, H. C. (1895). M.A., M.B., B.C. Cantab.
H.P., A.H.P.
- THUDICHUM, J. L. W. (1878). 11, Pembroke Gdns., Kensington. M.D. Giessen, F.R.C.P.
Lect. on Path. Chem.
- THURNAM, W. R. (1886). Nordrach-upon-Mendip, Blagdon, Somerset. M.D., B.S. Durh.
- THURNELL, H. L. (1889). 3 and 6, Woodville, Gravesend. M.A. Cantab.
- THURSTAN, E. P. (1874). St. George's Ter., Perth, Western Australia. B.A., M.D. Cantab.
- THURSTON, E. O. (1890). 27, Panton St., Haymarket. M.B., B.S. Lond. F.R.C.S. Lieut. I.M.S.
s 1892. 2nd Year Student, Half 1st and 2nd Coll. Prizes.
w 1892-3. 3rd Year Student, Half 3rd Coll. Prize.
w 1893-4. 4th Year Student, Cheltenham Medals.
Surgical Registrar.
H.S., A.H.S., Clin. Asst., Ear Dept.
- THWAITES, G. B. (1893). 94, Beaconsfield Road, Brighton. M.B., Lond. H.P., Clin. Assist. Throat Dept.
- TIMOTHY, P. V. (1848).
1851. Practical Midwifery, Prize.
- TIMS, H. W. M. (1889). West. Hosp. Med. Sch. Caxton St. M.D., C.M. Edin. Lect. on Biol. and Comp. Anat. Westm. Hosp. Med. Sch.

- TINLEY, W. E. F. (1891). Thorsgrif, Whitby, Yorks. M.D., B.S. Durh. w 1891-2. 2nd Year Student, 1st Coll. Prize. s 1892. 2nd Year Student, Half 1st and 2nd Coll. Prizes. w 1892-3. 3rd Year Student, Half 3rd Coll. Prize. s 1893 3rd Year Student, 2nd Coll. Prize. Obstet. H.P.
- TODD, F. (1879). 21, Finsbury Circus. L.D.S., Dent. Surg. Roy. Free Hosp.
- TODD, H. J. McC. (1872). Staff Surg. R.N.
- TOLLER, S. G. (1885). M.D. Lond., M.R.C.P. Phys., and Prof. of Clin. Med. at Kasr-el-Aini Hospital, Cairo. w 1885-6. 1st Year Student, 2nd Entrance Science Scholarship. s 1886. 1st Year Student, 1st Coll. Prize. w 1886-7. 2nd Year Student, Half 1st and 2nd Coll. Prizes. w 1887-8. 3rd Year Student, 2nd Coll. Prize. w 1888-9. 4th Year Student, The Mead Medal. Asst. Phys.; Med. Regist., Demonstr. of Pract. Med., Res. Asst. Phys. H.P., H.S., A.H.S., Jun. and Sen. Ophth. H.S., Clin. Asst. Throat and Ear Depts.
- TOMBLESON, J. B. (1895). Overtown House, Spring Grove, Middlesex. B.A., M.B., B.Ch. Oxon. Obst. H.P.
- TOMPSETT, R. H. (1884).
- TOMSON, W. B. (1879). Park Street West, Luton, Beds. M.D. Durh. w 1879-80. 1st Year Student, 2nd Coll. Prize. s 1880. 1st Year Student, 2nd Coll. Prize. w 1880-1. 2nd Year Student, The Musgrove Scholarship, Prosector's Prize. w 1881-2. 3rd Year Student, 2nd Coll. Prize; 2nd Tenure of Musgrove Scholarship. s 1882. 2nd Coll. Prize. w 1882-3. Treasurer's Gold Medal. A.H.P.
- TONKING, J. H. (1882). Chapel St., Camborne, Cornwall. M.B. Lond. w 1884-5. 3rd Year Student, Half 2nd and 3rd Coll. Prizes. w 1885-6. 4th Year Student, The Cheselden Medal. H.S., A.H.S. Clin. Asst. Ear Dept.
- TOOMBS, H. G. (1889). 7, St. Mary's Road, Bayswater. Ophth. H.S., Clin. Asst. Skin and Throat Depts.
- TOPPING, J. P. (1879). 29, Wolseley Road, Crouch End. M.D., C.M. Glasg. D.P.H.
- TOTSUKA, K. (1881). Tokio, Japan. Deputy Inspector General of Hospitals, Imperial Japanese Navy. F.R.C.S. s 1882. 1st Year Student, 2nd Coll. Prize. w 1882-3. 2nd Year Student, Half Musgrove Scholarship and 1st Coll. Prize combined. w 1883-4. 3rd Year Student, 2nd Tenure of Half Musgrove Scholarship, with 3rd Coll. Prize. A.H.S.
- TOWNSEND, H. W. W. (1893). B.A. Cantab. Surg. R.N.
- TOWNSEND, M. (1865). 24, Upper Phillimore Place, Kensington.
- TREADWELL, O. F. N. (1878) Med. Off. H.M. Conv. Prison, Portland.
- TREDINNICK, E. (1871). Penlu House, Craven Arms, Salop.
- TREVES, E. (1866). 2, The Drive, Hove, Brighton.
- TREVES, W. K. (1862). 31, Dalby Square, Margate. F.R.C.S. 1863. Modern Languages and Modern History, Coll. Prize. 1865. 3rd Year Student, 2nd Coll. Prize Prosector's Prize. H.S.
- TREVITHICK, E. G. (1886). 24, Promenade, Cheltenham. M.A., M.D., B.C. Cantab.
- TREVOR, H. O. (1877). Major R.A.M.C.
- TRIBE, A. G. (1888). Treorchy, Rhondda Valley.
- TRUMAN, C. E. (1871). 23, Old Burlington Street. M.A. Cantab.; L.D.S., Dent. Surg. St. Thos. Hosp., Surg. Dent. Hosp. Lond.
- TUCKER, W. H. (1891). Lt. I.M.S.
- TUKE, A. W. (1891). Lt. I.M.S. H.S., A.H.S.
- TURLE, A. (1870). Chipping Norton, Oxon.
- TURNER, J. G. (1886). 12, George St., Hanover Square. F.R.C.S., L.D.S.
- TURNER, R. (1852). Lewes, Sussex.
- TURNER, S. D. (1892). Coll. of Medicine, Newcastle-on-Tyne. M.B. Obst. H.P.
- TURNEY, H. G. (1884). 68, Portland Place. M.A., M.D., M.Ch. Oxon.; F.R.C.P., F.R.C.S., Asst. Phys.; in charge of Electrical Dept., Joint Lecturer on Pathology. St. Thomas's Hosp. Dean of Med. School. w 1885-6. 2nd Year Student, 2nd Coll. Prize. s 1886. 2nd Year Student, 2nd Coll. Prize. w 1886-7. 3rd Year Student, 3rd Coll. Prize. s 1887. 3rd Year Student, 1st Coll. Prize. w 1887-8. The Mead Medal. Res. Asst. Phys., H.S., H.P., Demonstrator of Morbid Anatomy and Histology, Demonstr. of Pract. Med., Jt. Lecturer on Forensic Medicine.
- TYRRELL, F. A. C. (1892). B.A., M.B., B.C. Cantab. Ophth. H.S.

- TYRRELL, W. (1872). 104, Cromwell Road, South Kensington. Sen. Anæsthetist St. Thos. Hosp. Tel.: "Tyrrell, London." H.P., A.H.P., R.A.
- TYRRELL, W. (1850). Claremont, Gt. Malvern, & 36, Victoria St., Lond. 1853. Ophthalmic Essay, Mr. Dixon's Prize. 1854. Surgical Reports, President's Prize. H.S.
- TYRRELL, W. G. B. (1878). Claremont, Great Malvern. D.P.H.
- UMNEY, W. F. (1885). Heatherbell, 15, Crystal Palace Park Road, Sydenham. M.D. Lond. w 1887-8. 2nd Year Student, 1st Coll. Prize. H.P., Jun. and Sen. Obst. H.P., Clin. Asst. Skin Dept.
- UNSWORTH, N. (1894). H.S., A.H.S., Clin. Assist. Skin Dept.
- USHER, C. H. (1888). 3, Bon Accord Square, Aberdeen. B.A., M.B., B.C. Cantab.; F.R.C.S. Edin. Ophth. H.S., Clin. Asst. Throat Dept.
- USHER, T. S. (1855). Carlton House, Yeadon, Leeds. M.D. St. And.
- VALLANCEY, A. d'E. de. (1881). 1, Theresa Terrace, Ravenscroft Park.
- VARDY, J. L. (1852). 72 and 74, Commercial Road, Portsmouth, and Portchester, Hants. 1855. Practical Midwifery, Prize.
- VERDON, E. S. (1886). Morocco. M.A., M.B., B.C. Cantab.
- VERDON, W. (1870). Oakfield, 58, Streatham Hill. M.D. Brux.; F.R.C.S. Eng. Med. Regist., H.S., Asst. Demonstr. of Anat.
- VICKERS, K. B. J. (1887). Wellington, Salop. M.B. Lond.
- VIVIAN, G. E. (1876). Staindrop, Darlington, Durham.
- VIVIAN, J. H. P. (1884). 22, West Kensington Mansions.
- VORES, A. (1874). Charters Towers, Queensland.
- VULLIAMY, J. T. (1889). Riversdale, Ware, Herts.
- WADD, F. J. (1861). Prospect House, Richmond, Surrey. M.B., C.M. Aberd., Surg. Richmond Hospital. R.A.
- WADD, H. R. (1887). Prospect House, Richmond, Surrey.
- WADES, J. W. B. Sydney, New South Wales. M.D., Univ. N.Y.; M.D. Aberd.
- WADIA, D. R. (1880). 49, Sopori Bang Road, Parel, Bombay.
- WAGSTAFFE, W. W. (1861). Purleigh, St. John's Hill, Sevenoaks, Kent. B.A. Lond., F.R.C.S.
- w 1862. Matriculation Examination-Classics and Mathematics, President's Prize. Physics and Natural History, Coll. Prize; Modern Languages, &c., Coll. Prize; 1st Year Student, Treasurer's Prize.
1863. 2nd Year Student, 1st Coll. Prize.
1864. 3rd Year Student, 1st Coll. Prize; Physical Society's 3rd Year's Prize; Cheselden Medal; Treasurer's Gold Medal.
- Sen. Asst. Surg., Lect. on Anat. and Res. Asst. Surg. St. Thos. Hosp., Mem. Board of Exam. R.C.S.E., Exam. in Arts Apoth. Hall, and Med. Insp. H.M. Privy Council.
- WAINWRIGHT, A. S. R. (1878). Pembury Lodge, Tottenham, Middlesex.
- WAINWRIGHT, W. L. (1886). M.B., B.S. Lond. H.S., A.H.S., Sen. and Jun. Obst. H.P.
- WAITES, R. F. (1885). East Bank, Rotherham. Lect. on Hygiene Rotherham Sch. of Sci.
- WAKEFIELD, M. J. (1884). 173, Handsworth New Road, Birmingham. M.B. Durh.
- WAKLEY, T., Jun. (1875). 5, Queen's Gate. Joint Editor of *The Lancet*.
- WALCOTT, R. B. (1839). Barbados, W. Indies. M.D. Lond., F.R.C.S.
- WALKER, A. W. H. (1886). Argyle House, Station Parade, Harrogate. M.D. Brux.
- WALKER, J. N. (1891). Lt. I.M.S. Clin. Assist. Throat Dept.
- WALKER, R. F. (1883). Ivy Cottage, Esher, Surrey.
- WALKER, R. (1853). Budleigh-Salterton, Devon. M.D. St. And.
- WALKER, W. W. (1890). 33, West Gate, Peterborough. B.A., M.B., B.C. Cantab.
- WALLACE, A. C. (1876). 1, Grange Terrace, The Grange, Guernsey.
- WALLACE, C. S. (1886). M.B., B.S. Lond., F.R.C.S., Resident Asst. Surg.
- w 1887-8. 1st Year Student, Half 2nd Coll. Prize.
- s 1888. 1st Year Student, 2nd Coll. Prize.
- w 1888-9. 2nd Year Student, 1st Coll. Prize.
- w 1889-90. 3rd Year Student, 2nd Coll. Prize.
- Surgical Registrar, H.S., A.H.S., Sen. and Jun. Obst. H.P., Clin. Asst. Ear Dept.

- WALLACE, F. G. (1887). 104, Earl's Court Road. M.A., M.B., B.C. Cantab. Non.-Res. H.P.
- WALLACE, J. (1842). Carshalton, Surrey (retired).
- WALLACE, L. A. R. (1891). 24, Norfolk Crescent, Hyde Park. B.A., M.B. Oxon. H.S., A.H.S., Clin. Asst, Ear & Skin Depts.
- WALLER, A. W. (1883). 31, London Road, Stroud, Gloucester. D.P.H. Camb.
- WALLER, W. B. (1870). 153, Seven Sisters Road, Holloway.
- WALLFORD, W. (1842). Brome-Walton, 61, Appach Rd., Josephine Avenue, Brixton Hill.
- WALTER, E. C. (1886). Market Place, Wallingford.
- WALTERS, F. R. (1875). 21, Wimpole Street, and Ferndale, Fairfield Road, Croydon. M.D., B.S. Lond.; M.R.C.P., F.R.C.S., Phys. N. Lond. Consump. Hosp. and City Disp. A.H.P., A.H.S.
- WARD, F. H. (1862). 8, Lyndhurst Villas, The Park, Ealing.
1863. 1st Year Student, Treasurer's Prize.
1864. 2nd Year Student, 1st Coll. Prize;
Physical Society's 2nd Year's Prize.
1865. 3rd Year Student, 1st Coll. Prize;
Physical Society's 3rd Year's Prize;
Cheselden Medal;
Treasurer's Gold Medal.
- WARD, W. F. (1882). Bawtry, Yorks.
- WARD, W. T. (1876). Stanhope, Canada. M.D., C.M. Montreal.
- WARE, E. E. (1884). 161, Haverstock Hill. M.D., B.S. Lond. H.S., A.H.S.
- WARE, H. S. (1889). Holly Bank, King's Heath, Worc. B.A., M.B., B.C. Cantab.
- WARNER, A. (1891). M.D., Durh.
- WARREN, S. (1881). Kensington, Adelaide, S. Australia.
- WATERS, F. W. (1888). 23, Alma Road, Sheerness-on-Sea.
- WATERS, H. G. (1887). East Indian Ry. Co. Tundla, N.W.P. India.
- WATERS, W. J. (1894).
- WATERWORTH, E. A. (1865). 123, St. James' St., Newport, I.W. M.D. Aberd.
- WATKINS-PITCHFORD, W. (1887). 51, Hagley Road, Eggbaston, Birmingham. M.B. Lond. F.R.C.S. H.P.
- WAY, F. W. (1852). Elm Grove, Southsea.
- WAY, J. H. F. (1886). Victoria Road North, Southsea.
- WAY, J. P. (1860). Mile End Villa, Landport. R.A.
- WEBB, F. (1890). Nelson Place, Newcastle-under-Lyme.
- WEBBER, W. W. (1876). Crewkerne, Somerset.
w 1876-7. 1st Year Student, 3rd Coll. Prize.
- WEBSTER, E. (1883). 49, Ditchling Road, Brighton.
w 1883-4. 1st Year Student, 1st Coll. Prize.
s 1885. 2nd Year Student, Half 2nd Coll. Prize.
- WEBSTER, J. H. Weedon, Northamptonshire.
- WEBSTER, M. H. (1858). Grafton, New South Wales.
- WEEKES, F. H. (1873). 28, Gillygate, York. F.R.C.S.
w 1873-4. 1st Year Student, 3rd Coll. Prize.
s 1874. 3rd Coll. Prize.
w 1874-5. 2nd Year Student, 2nd Coll. Prize.
s 1875. 3rd Coll. Prize.
w 1875-6. 3rd Year Student, 3rd Coll. Prize. H.S., R.A.
- WELCH, C. H. (1859). 46, Upp. Rock Gdns., Brighton. F.R.C.S. Edin.
- WELCH, R. W. F. (1881). 61, Oxford Street, Southampton.
- WELCHMAN, E. (1869). Heckington, Lincs. H.P., H.S.
- WELLBY, S. (1892). The Laurels, Casewick Road, W. Norwood. B.A., M.B., B.Ch. Oxon.
- WELLS, A. E. (1877). Cuckfield, Sussex. M.D. Lond.
w 1877-8. 1st Year Student, 2nd Entrance Science Scholarship. H.P., A.H.P., H.S., A.H.S., R.A.
- WELSFORD, G. F. (1880). St. Peter St., Tiverton, Devon. B.A., M.B. Cantab.
- WEST, C. J. (1879). The Grove, Fulbeck, Grantham.
- WEST, R. H. (1870). 10, Station Road, Taunton. M.A. Cantab.
- WESTON, G. H. (1882). Forest Lodge, Shirley, Hants. M.B., D.P.H. Cantab.
- WHATELY, S. H. (1886).

- WHEATON, S. W. (1882). 76, The Chase, Clapham Common. M.D. Lond., M.R.C.P., D.P.H., Physician to the Royal Hospital for Children and Women. Med. Insp. Local Govt. Board.
s 1883. 3rd Year Student, Half 1st and 2nd Coll. Prize.
w 1885-6. 4th Year Student, The Mead Medal.
H.P., R.A., Demonst. of Physics.
- WHEELER, C. (1854). 96, Kennington Park Road.
- WHEELER, P. C. E. D'Erf. (1883). English Hospital, Jerusalem. M.D. Brux., F.R.C.S. Edin.
- WHEELER, M. (1892). 159, Gt. College Street, Camden Town.
- WHELPTON, E. S. (1881). Gonville House, Beckenham Rd., Beckenham. M.A. Cantab.
- WHERRY, G. E. (1869). Corpus Bldgs., Cambridge. M.A., M.B., M.C. Cantab., F.R.C.S., Surg. Addenb. Hosp., Lect. on Surg. Univ. Camb. Asst. Demonst. of Anat.
- WHICELLO, E. (1892). 368, Dudley Road, Birmingham. B.A., M.B., B.C. Cantab.
- WHICELLO, H. (1888). The Mount, Tattenhall, Cheshire.
- WHISHAW, R. R. (1883). Larkstone, Birdhurst Road, South Croydon. B.A., M.B., B.C. Cantab., F.R.C.S., Surg. Croydon Hosp.
- WHISTLER, Rev. C. W. (1875). Stockland Vicarage, Bridgwater, Somers.
- WHISTON, P. H. (1882). Capt. R.A.M.C., D.P.H.
- WHITAKER, S. M. (1886). Chilwell, Beeston, Notts.
- WHITE, C. H. (1872). 4, East Circus St., Park Row, Nottingham. R.A.
- WHITE, E. F. (1876). Westlands, 280, Upper Richmond Road, Putney. F.R.C.S.
Anaesthetist., H.P., H.S., A.H.S.
- WHITE, F. (1889). Hutwa, Prince's Road, Lewisham.
- WHITE, M. (1888). 100, Lewisham Rd.
- WHITEHEAD, E. T. (1886). Camperdown House, 118, Lavender Hill.
w 1886-7. 1st Year Student, 2nd Coll. Prize.
s 1888. 2nd Year Student, Half 2nd Coll. Prize.
- WHITEHEAD, J. L. (1860). Belgrave House, Ventnor, Isle of Wight. M.D. St. And.; M.R.C.P., J.P., Cons. Phys. Isle of Wight Co. Hosp. H.S.
- WHITTINGTON, R. (1894). 100, Hazleville Road, Hornsey Lane. B.A., M.B., B.Ch. Oxon.
Clin. Asst. Skin Dept.
- WICKHAM, G. H. (1885). Fleet, Hants. M.B., B.C. Cantab.
H.P., Clin. Asst. Ear Dept.
- WIGHAM, W. H. (1884). South Molton, North Devon. M.B. Durh.
- WIGHTMAN, H. T. (1888). 580, Ecclesall Rd., Sheffield.
- WIGLESWORTH, J. (1878). Med. Superint. Co. Asyl. Rainhill, Lanc. M.D. Lond.; M.R.C.P., Lect. on Ment. Dis. Univ. Coll. Liverpool, Exam. in Ment. Dis. Victoria Univ.
- WILDE, L. (1883). Palace Chambers, Westminster. M.D. Durh.; M.R.C.P. Lond.; D.P.H.; Med. Off. Health Bedfordshire County Council. Physician Croydon Boro' Hosp.
- WILES, J. (1848). Dep. Surg.-Gen. R.A.M.C. (retired).
- WILKINSON, C. J. (1879). 3, Osborne Villas, Osborne Road, Windsor.
- WILLIAMS, A. H. (1869). Lt.-Col. I.M.S. Bengal. M.B., C.M. Aberd.
- WILLIAMS, A. W. (1891). 4, Lansdowne Road, Hove. M.B., C.M. Edin., D.P.H.
- WILLIAMS, C. J. (1874). Brookside, Woodhall Spa, Linc.
- WILLIAMS, D. C. L. (1883).
- WILLIAMS, F. N. (1879). 181, High Street, Brentford.
- WILLIAMS, CHISHOLM (1884). Mansion House Cham., 11, Queen Victoria St., and Dunstaffnage, 99, Wickham Rd., Brockley. F.R.C.S. Edin. Surg. City Orthop. Hosp.
- WILLIAMS, G. F. C. (1874).
- WILLIAMS, H. (1867). Moor Park, Harrogate, Yorks. (not in practice). J.P.
1868. 1st Year Student, 2nd Coll. Prize.
1869. 2nd Year Student, 3rd Coll. Prize. H.S.
- WILLIAMS, H. B. (1886). 78, Lewisham High Road. M.D. Brux.
- WILLIAMS, J. D. E. (1891). 23, Broadway, Barking.
- WILLIAMS, L. L. B. (1885). 8, York Street, Portman Square. M.D., C.M. Glasg.
- WILLIAMS, P. GARNONS (1891). Surg. R.N.

- WILLIAMS, P. M. G. (1852). Parrag House, Newport, Pembroke.
1854. Practical Midwifery, Prize.
- WILLIAMS, R. B. (1886). Aston Clinton Rectory, Tring.
- WILLIAMS, R. M. (1879). 35, Kensington Park Gardens. M.D. Lond.
w 1879-80, 1st Entrance Science Scholarship. H.P., A.H.P.
- WILLIS, C. F. (1871). Lt.-Col. I.M.S. Bombay. M.D. Durh., M.R.C.P. Edin.
- WILLOCK, E. H. (1886). 113, London Road, Croydon.
- WILLS, B. S. (1892). 85, Lambeth Palace Road.
- WILLSON, H. S. (1890). Weybridge, Surrey. B.A., M.B., B.C. Cantab.
- WILSON, A. (1880). 4, Coburg Terr., Anlaby Road, Hull.
- WILSON, A. MARIUS (1884). Hof St., Cape Town. M.D., B.S. Durh., J.P.
- WILSON, S. (1880). 291, Oldham Rd., Rochdale.
- WINDLEY, W. (1882). Colston-Basset, Bingham, Notts. M.A. Cantab.
- WINDSOR, C. W. (1891). Royston, Herts. M.A., M.D., B.C. Cantab. H.P.
- WINDSOR, T. (1853). Gt. Budworth, Cheshire (retired).
- WINSTON, W. B. (1887). Cleveland House, Bounds Green Road, Bowes Park. B.Sc. Lond.
w 1887-8. 1st Year Student, 2nd Entrance Science Scholarship.
w 1888-9. 2nd Year Student, 2nd Coll. Prize.
s 1889. 2nd Year Student, 1st Coll. Prize.
w 1891-2. Solly Medal and Prize.
Demonstr. of Physiology. Clin. Asst. Skin Dept.
- WINTERBURN, J. W. (1879). Osborne House, St. Aubyn, Jersey.
- WISHART, J. (1876). London, Ontario, Canada. F.R.C.S. Edin.
- WOAKES, A. B. (1880). 78, Harley Street. Surg. Lond. Throat Hosp.
- WOAKES, E. (1854). 78, Harley St., Cavendish Square. M.D. Lond. Sen. Aur. Surg. Lond. Hosp., Lect. on Aur. Surg. Lond. Hosp. Med. Sch., Surg. Lond. Throat Hosp.
1857 2nd Year Student, 2nd Prize. Clinical Medicine, Prize.
1858. Essay on Neuralgia, Mr. N. Smith's Prize;
Surgery and Surgical Anatomy, Cheselden Medal. H.S.
- WOLFF, A. (1870). 4, Ilchester Gdns., Prince's Square, Bayswater.
- WOOD, E. J. (1874). Yalding, Maidstone, Kent. B.A., M.B. Cantab.
- WOOD, J. (1884).
- WOOD, R. (1841). Driffield, Yorks. and The Red House, Robin Hood's Bay. M.D. St. And., J.P.
- WOODHOUSE, T. J. (1854). M.D. Lond. F.R.C.S.
- WOODHOUSE, T. P. (1874). Maj. R.A. M.C.
- WOODMAN, W. E. (1874). Oxford Lodge, Croydon. M.D. Durh.
s 1875. 1st Year Student, 2nd Coll. Prize.
- WORTH, E. H. (1888). St. Day, Scorrier, Cornwall.
- WRENCH, E. B. (1887). Ashenfell, Baslow, Derbyshire. M.B., B.C. Cantab.
- WRENCH, E. M. (1850). Park Lodge Baslow, and Bakewell, Derbyshire. F.R.C.S. J.P.
1851. Physical Society's Essay, Treasurer's 1st Year's Prize.
Asst. R.A.
- WRIDE, F. G. (1867). Wootton Bassett, Wilts.
- WRIGHT, A. (1858). The Lodge, Romford, Essex.
- WRIGHT, E. H. (1882). Capt. I.M.S. Madras.
s 1885. 2nd Year Student, Half 2nd Coll. Prize.
- WRIGHT, S. F. (1884). St. Peter's Lodge, Eltham Road, Lee, Kent. M.D. Lond.
- WRINCH, E. P. (1888). 19, Wide Bargate, Boston, Lincs. M.B., B.S. Durh.
- WROUGHTON, W. C. H. (1885). Wetheral, Carlisle.
- WYMAN, W. S. (1851). Red Brae, 18, Putney Hill. M.D. St. And., F.R.C.S.
1852. Matriculation Examination, Scholarship.
- WYSARD, A. T. (1887). Surg. R.N.
- YEOMAN, C. (1883). Kipping House, Thornton, Bradford, Yorks. B.A., M.B., B.C. Cantab. R.A.
- YEOMAN, G. (1885). Northallerton. B.A., Camb.
- YEOMAN, S. (1885). Clark's Hill, Prestwich, Manchester. B.A., M.B., B.C. Cantab.
- YOUNG, B. M. (1893). Crowcombe, Taunton. D.P.H. Camb.
- ZEIDAN, Selim. (1886).

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